

**FINAL
ENVIRONMENTAL ASSESSMENT FOR
CONSTRUCTION OF THE MARINE CORPS RESERVE CENTER AT JOINT
BASE LEWIS-MCCHORD YAKIMA TRAINING CENTER**

YAKIMA AND KITTITAS COUNTIES, WASHINGTON

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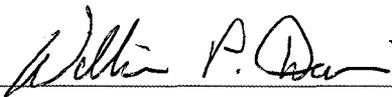
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**Environmental Assessment for Construction of the Marine Corps Reserve Center at Joint Base
Lewis-McChord Yakima Training Center**

Yakima and Kittitas Counties, Washington

Approved by:

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1 **Executive Summary**

2 This Environmental Assessment (EA) has been prepared by the United States Marine Corps (USMC) in
3 accordance with the National Environmental Policy Act (NEPA) of 1969 (42 United States Code [USC]
4 4321-4370d), as implemented by the Council on Environmental Quality (CEQ) regulations (40 Code of
5 Federal Regulations [CFR] Parts 1500-1508), and the NEPA procedures contained in the Marine Corps
6 Order P5090.2A, Change 1, Chapter 12 (22 January 2008), *Environmental Compliance and Protection*
7 *Manual*, which establishes USMC procedures for implementing NEPA.

8 **ES.1 DESCRIPTION OF THE PROPOSED ACTION**

9 The Marine Forces Reserve (MFR) proposes to secure a real estate agreement with the Department of the
10 Army to construct a new Marine Corps Reserve Center (MCRC) in the Cantonment Area at Yakima
11 Training Center (YTC) north of the City of Yakima, in Washington State. The MCRC will provide
12 combat vehicle maintenance facilities, vehicle holding sheds, tactical vehicle parking areas, wash racks,
13 security fences, and a reserve training center for Marine Corps Reserve, Company B, 4th Tank Battalion
14 (Company B). Company B has an authorized strength of 133. As a result of the Preferred Action, all
15 personnel will be reassigned to the new MCRC at YTC for all duty. This includes nine active-duty and
16 62 reserve personnel who currently report to the existing MCRC in downtown Yakima (see section ES.2).

17 **ES.2 PURPOSE AND NEED FOR THE PROPOSED ACTION**

18 The Proposed Action is needed in order to provide Company B with the necessary facilities to meet its
19 training mission requirements, consolidate its operational assets, maintain its combat readiness, and
20 comply with mandatory Anti Terrorist/Force Protection (AT/FP) standards (Unified Facilities Criteria 4-
21 010-01, 2007). Company B's current training center is located in the City of Yakima, approximately 12
22 miles by road from YTC. Company B leases its vehicle maintenance space at YTC from the US Army
23 and shares that space with the Washington Army National Guard (ARNG). As a result, Company B's
24 training and administrative facilities are physically separate from each other. This creates inefficiencies
25 and requires the transport of weapons from the reserve center, which compromises security, logistics, and
26 safety.

27 **ES.3 ALTERNATIVES CONSIDERED BUT DISMISSED**

28 This EA considered two alternatives to the Proposed Action. One alternative would be to upgrade the
29 current MCRC in the City of Yakima to AT/FP standards while continuing to share maintenance facilities
30 with the Washington ARNG. The second alternative would be to consolidate the tank maintenance
31 facility with the MCRC at the present location in the City of Yakima, and upgrade the reserve center to
32 meet AT/FP standards. Both of these alternatives were considered but dismissed from further
33 consideration because they would not meet the project purpose and need.

1 **ES.4 ENVIRONMENTAL IMPACT OF THE PROPOSED ACTION**

2 Implementation of the Proposed Action would not result in any significant environmental impacts. The
3 following is a brief summary of the anticipated impacts from the Proposed Action. For a detailed
4 description and analysis, refer to Chapter 4 of this EA, Environmental Consequences.

5 **Land Use.** The Proposed Action is generally consistent with the existing land use and current operations
6 at YTC. Training and operations at YTC would not be impacted. The Proposed Action would adversely
7 affect the scenic views from approximately six off-site residences within 500 feet of the MCRC Site.
8 However, this effect would be minimal in that the proposed MCRC facility would only be one story in
9 height, and is consistent in scale and nature with other facilities in the Cantonment Area. Accordingly, the
10 Proposed Action would have no significant impact on Land Use.

11 **Socioeconomics and Environmental Justice.** The Proposed Action would have no adverse
12 socioeconomic impacts. The Proposed Action would create no new permanent employment positions in
13 the Yakima region; therefore no change in regional population is expected. The Proposed Action would
14 involve permanent relocation of nine full time active-duty personnel and approximately 62 reservists from
15 the downtown MCRC to YTC.¹ YTC has approximately 500 permanent employees and hosts an average
16 of 2,200 personnel during training exercises (US Army 2010). Approximately 62 Company B reservists
17 already train at YTC. YTC is within commuting distance of the existing downtown MCRC. The
18 consolidation of activities at YTC would not change the demographics of communities surrounding YTC.

19 Construction activities would have a short-term positive effect on the local economy through the purchase
20 of construction materials and the generation of construction wages and jobs. The direct and indirect
21 effects of the Proposed Action would not cause disproportionately adverse environmental, economic, or
22 health impacts on minority or low-income populations, or children near YTC.

23 Overall, the Proposed Action would have no significant impact on socioeconomics and environmental
24 justice.

25 **Infrastructure, Utilities, and Emergency Services/Medical Care.** The Proposed Action would have no
26 significant effect on infrastructure, utilities, or services at YTC. Although some additional demands
27 would be placed on YTC's infrastructure, the installation's existing capacities for potable water
28 production, wastewater treatment, energy distribution, medical care, and solid waste disposal are adequate
29 to support the Proposed Action. Therefore, the Proposed Action would have no significant impact on
30 Infrastructure, Utilities, or Emergency Services/Medical Care.

31 **Transportation and Traffic.** Traffic on Firing Center Road would increase slightly over the short term
32 as construction-related vehicles enter and exit the Cantonment Area. Construction-related traffic would
33 cease once construction is complete. After completion of the MCRC, traffic volumes entering YTC could
34 increase slightly, but would not exceed the capacity of the roadways or gate on Firing Center Road. Thus,
35 the Proposed Action would have no significant impacts on transportation and traffic.

¹ Company B's authorized strength is 133 personnel, including all active and reserve personnel.

1 **Air Quality.** Construction activities associated with the Proposed Action would result in some temporary
2 increases in criteria pollutant emissions. These temporary impacts would be generally limited to the
3 immediate vicinity of the construction area. Operation of the new MCRC would also include two new air
4 emissions sources (boilers) generating minimal criteria emissions, along with the potential for fugitive
5 dust emissions from the MCRC Site. Criteria pollutant emissions associated with construction and
6 operation of the Proposed Action would not violate National Ambient Air Quality Standards (NAAQS),
7 Washington State Ambient Air Quality Standards (AAQS), or impair visibility in any Class I Areas.
8 Therefore, the Proposed Action would have no significant air quality impacts.

9 **Noise.** Construction of the Proposed Action would create some temporary increases in noise in the
10 vicinity of the proposed MCRC Site. Specifically, the use of heavy equipment for site preparation and
11 development (e.g., vegetation removal, grading, and backfill) could potentially generate noise levels
12 above average ambient noise levels. Noise levels would be typical of standard construction activities, and
13 would last only through the construction phase. Noise from operation of the new MCRC would be
14 consistent with background noise levels already experienced at YTC. Construction operations will only
15 occur during daytime hours, on weekdays, to avoid unnecessary disturbance to residences adjacent to the
16 YTC boundaries. Thus, there would be no significant noise impacts from the Proposed Action.

17 **Cultural Resources.** No known archaeological or architectural resources are located within or in close
18 proximity to the MCRC Site. MFR has concluded that the Proposed Action would have no effect on any
19 sites eligible for the National Register and has requested comment from the State Historic Preservation
20 Office (SHPO).

21 **Natural Resources.** The clearing, filling, grading, and construction activities associated with the
22 Proposed Action would result in the disturbance of approximately two acres of soil, and modifications of
23 topography. Current vegetation communities have been altered as a result of previous land use and
24 consist of native and non-native grasses, forbs, and shrubs, as well as some noxious weeds. The Proposed
25 Action would not affect any areas of active or potential agricultural cultivation.

26 No federal or state-listed threatened or endangered species are known to occur on the site. MFR
27 concludes that the Proposed Action would have no effect on any listed species. A field inspection
28 documented one Townsend's ground squirrel at the western edge of the proposed MCRC Site and three
29 burrow complexes that could provide habitat for either the Townsend's ground squirrel or the burrowing
30 owl. Both of these species are considered Species of Concern by the USFWS and are designated as
31 Candidate species by the WDFW. The field inspection found no burrowing owls. Nevertheless, MFR has
32 committed to having a biologist on-site during site preparation to ensure that these species, if present, are
33 protected and relocated to other suitable habitat at YTC. MFR has concluded that its Proposed Action
34 would have no effect on any federally-listed threatened or endangered species, and has requested
35 comment from the US Fish and Wildlife Service (USFWS).

36 Accordingly, the Proposed Action would have no significant effect on natural resources.

1 **Hazardous Materials and Waste.** There are no installation restoration sites, solid waste management
2 units, or underground storage tank sites located within the proposed MCRC Site. The Proposed Action
3 would not affect the generation of hazardous materials or waste. Handling and disposal of hazardous
4 materials and waste will be managed according to YTC procedures. Hazardous wastes present at the
5 existing MCRC in downtown Yakima would be disposed of following applicable federal and state
6 procedures. Accordingly, the Proposed Action would have no significant impact on hazardous materials
7 and wastes.

8 **Cumulative Impacts.** There would be no significant cumulative impacts to any resource. Section 5 of
9 this EA contains additional discussion about potential cumulative impacts from the Proposed Action.

10 **ES.5 MITIGATION**

11 This EA has not identified any significant impacts resulting from the Proposed Action that require
12 mitigation. MFR has already proposed to implement various mitigation measures and to follow specific
13 Best Management Practices (BMPs) that can help further reduce impacts.

14 **Mitigation Measures**

15 MFR proposes the following mitigation measures as part of the Proposed Action:

- 16 • Provision of a stormwater retention pond, maintained in good working condition;
- 17 • Provision of erosion and sediment control measures to address potential impacts to soils and
18 topography;
- 19 • Provision of an oil/water separator at the vehicle wash rack;
- 20 • Ensuring the presence of an archaeologist and a biologist during site clearing and grading, in the
21 event that any unanticipated archaeological artifacts or potential species of concern (e.g.,
22 Townsend's ground squirrel, burrowing owl) are found; and
- 23 • Control of Russian knapweed and any other noxious plants found on the site, in accordance with
24 the YTC Integrated Pest Management Plan.

25 **Best Management Practices**

26 MFR proposes to employ the following BMPs in constructing and operating the Proposed Action:

- 27 • Construction of the MCRC to Leadership in Energy and Environmental Design (LEED) Silver
28 standards to reduce energy and water use;
- 29 • Provision of hazardous materials storage, including enclosed, separate structures for storage of
30 hazardous materials, flammable storage for any flammable hazardous materials, and a satellite
31 site for accumulation and storage of hazardous waste;
- 32 • Use of "low impact design" stormwater management techniques for the MCRC to minimize
33 impacts on water quality;

- 1 • Preparation and implementation of a dust control plan to manage fugitive dust and wind erosion
2 during construction;
- 3 • Preparation and implementation of a landscaping plan and use of native plant species for
4 landscaping and dust and erosion control during MCRC operations;
- 5 • Restriction of construction operations to 0730 – 1630 hours, Monday through Friday, to avoid
6 unnecessary disturbance to residences adjacent to the YTC boundaries; and
- 7 • Consistent with mission-essential requirements, consideration of views from and minimization of
8 light pollution to neighboring private property through facility design and siting.
- 9

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Table of Contents

EXECUTIVE SUMMARY	ES-1
ACRONYMS AND ABBREVIATIONS.....	v
ES.1 DESCRIPTION OF THE PROPOSED ACTION.....	ES-1
ES.2 PURPOSE AND NEED FOR THE PROPOSED ACTION.....	ES-1
ES.3 ALTERNATIVES CONSIDERED BUT DISMISSED.....	ES-1
ES.4 ENVIRONMENTAL IMPACT OF THE PROPOSED ACTION.....	ES-2
ES.5 MITIGATION.....	ES-4
Mitigation Measures.....	ES-4
Best Management Practices.....	ES-4
1.0 PURPOSE AND NEED	1-1
1.1 INTRODUCTION.....	1-1
1.2 BACKGROUND.....	1-4
1.2.1 Marine Forces Reserve.....	1-4
1.2.2 Company B.....	1-4
1.2.3 Yakima Training Center (YTC).....	1-4
1.3 PURPOSE AND NEED FOR PROPOSED ACTION.....	1-5
1.3.1 Anti Terrorist Force Protection.....	1-6
1.4 THE ENVIRONMENTAL REVIEW PROCESS.....	1-8
1.4.1 The National Environmental Policy Act.....	1-8
1.4.2 Scoping and Alternatives Development.....	1-9
1.4.3 Agency Coordination and Permit Requirements.....	1-9
2.0 PROPOSED ACTION AND ALTERNATIVES.....	2-1
2.1 DESCRIPTION OF PROPOSED ACTION.....	2-1
2.2 ALTERNATIVES CONSIDERED BUT DISMISSED.....	2-2
2.3 NO ACTION ALTERNATIVE.....	2-3
3.0 AFFECTED ENVIRONMENT	3-1
3.1 LAND USE.....	3-1
3.1.1 YTC Land Use.....	3-1
3.1.2 Surrounding Land Use.....	3-2
3.2 SOCIOECONOMICS.....	3-2
3.2.1 Demographics.....	3-4
3.2.2 Economic Characteristics.....	3-5
3.2.3 Race and Environmental Justice.....	3-6
3.3 INFRASTRUCTURE, UTILITIES, AND EMERGENCY SERVICES/MEDICAL CARE.....	3-8
3.3.1 Potable Water Supply.....	3-8
3.3.2 Wastewater System.....	3-8
3.3.3 Stormwater System.....	3-8
3.3.4 Energy.....	3-8
3.3.5 Solid Waste.....	3-8
3.3.6 Emergency Services/Medical Care.....	3-9
3.4 TRANSPORTATION AND TRAFFIC.....	3-9
3.5 AIR QUALITY.....	3-12

3.6	NOISE	3-15
3.7	CULTURAL RESOURCES	3-17
3.7.1	Archaeological Resources	3-18
3.7.2	Historic and Architectural Resources	3-18
3.8	NATURAL RESOURCES	3-18
3.8.1	Geology, Topography, and Soils	3-19
3.8.2	Water Resources	3-19
3.8.3	Vegetation.....	3-20
3.8.4	Wildlife.....	3-23
3.8.5	Special Status Species	3-23
3.9	HAZARDOUS MATERIALS AND WASTE	3-24
4.0	ENVIRONMENTAL CONSEQUENCES	4-1
	Duration.....	4-1
	Spatial Scale	4-1
	Intensity	4-1
	Significance/Significant.....	4-1
4.1	LAND USE AND VISUAL RESOURCES	4-1
4.1.1	Proposed Action	4-1
4.1.2	No Action Alternative	4-2
4.2	SOCIOECONOMICS	4-2
4.2.1	Proposed Action	4-2
4.2.2	No Action Alternative	4-3
4.3	INFRASTRUCTURE, UTILITIES, AND MEDICAL SERVICES	4-4
4.3.1	Proposed Action	4-4
4.3.2	No Action Alternative	4-6
4.4	TRANSPORTATION AND TRAFFIC	4-7
4.4.1	Proposed Action	4-7
4.4.2	No Action Alternative	4-7
4.5	AIR QUALITY	4-7
4.5.1	Proposed Action	4-7
4.5.2	No Action Alternative	4-9
4.6	NOISE	4-9
4.6.1	Proposed Action	4-9
4.6.2	No Action Alternative	4-10
4.7	CULTURAL RESOURCES	4-10
4.7.1	Proposed Action	4-10
4.7.2	No Action Alternative	4-11
4.8	NATURAL RESOURCES	4-11
4.8.1	Proposed Action	4-11
4.9	HAZARDOUS MATERIALS AND WASTE	4-12
4.9.1	Proposed Action	4-12
4.9.2	No Action Alternative	4-13
4.10	SUMMARY OF IMPACTS	4-13
5.0	CUMULATIVE IMPACTS	5-1

5.1 FORESEEABLE ACTIONS AND CUMULATIVE IMPACTS	5-1
5.1.1 Recent, Ongoing, and Reasonably Foreseeable Actions.....	5-1
5.1.2 Methodology for Cumulative Impact Assessment.....	5-2
5.2 IRREVERSIBLE AND IRRETRIEVABLE COMMITMENT OF NATURAL AND DEPLETABLE RESOURCES	5-5
5.3 RELATIONSHIP BETWEEN LOCAL SHORT-TERM USE OF THE ENVIRONMENT AND LONG-TERM PRODUCTIVITY	5-5
5.4 MITIGATION MEASURES	5-6
Mitigation Measures	5-6
Best Management Practices.....	5-6
6.0 LIST OF PREPARERS	6-1
7.0 REFERENCES	7-1
LEGAL CITATIONS.....	7-3
APPENDIX A AGENCY CONSULTATIONS	A-1
APPENDIX B TRAFFIC CALCULATIONS	B-1
APPENDIX C MCRC SITE FIELD SURVEY REPORT	C-1
APPENDIX D AIR EMISSIONS CALCULATIONS	D-1

Figures

Figure 1-1. Regional Location Map	1-1
Figure 1-2. Yakima Training Center Facilities	1-2
Figure 1-3. Location of Proposed MCRC Site	1-3
Figure 1-4. Tank in a Work Bay at the MFR/ARNG Maintenance Facility at YTC	1-6
Figure 1-5. Location of the Existing MCRC in the City of Yakima and the Proposed MCRC at YTC	1-7
Figure 1-6. Aerial Photograph of the Existing MCRC in the City of Yakima	1-7
Figure 3-1. Region of Influence and Census Geography	3-3
Figure 3-2. Major Transportation Corridors	3-10
Figure 3-3. PM₁₀ Maintenance Area Near YTC	3-14
Figure 3-4. Topography and Surface Water Features near the proposed MCRC Site	3-21
Figure 3-5. Vegetation Communities at the Yakima Training Center	3-22
Figure 4-1. Existing Utilities in the Vicinity of the MCRC Site	4-4

Tables

Table 3-1. 2000 Population Profile of the ROI..... 3-4

Table 3-2. Population Trends 1990-2030 3-4

Table 3-3. Income and Poverty 3-5

Table 3-4. 2000 Population Profile of the ROI..... 3-6

Table 3-5. Race and Ethnicity (Percent) 3-7

Table 3-6. Existing Traffic Volumes near YTC, 20093-11

Table 3-7. Summary of YTC Incoming Vehicle Counts, Firing Center Road, 2005-63-12

Table 3-8. NAAQS and Washington AAQS3-15

Table 3-9. Sound Levels of Typical Noise Sources and Noise Environments.....3-16

Table 3-10. Land Use Planning Guidelines3-17

Table 3-11. Federal and State-listed Species Known to Occur or Potentially Occurring at YTC.....3-23

Table 4-1. Emissions from the Proposed Action 4-8

Table 4-2. Peak Sound Level of Heavy Equipment4-10

Table 4-3. Summary of Impacts Associated with the Proposed Action and No-Action Alternative4-14

Table 5-1. Scope of Cumulative Impact Evaluations..... 5-3

Acronyms and Abbreviations

AADT	Annual Average Daily Traffic	MCRC	Marine Corps Reserve Center
AAQS	Ambient Air Quality Standard	MFR	Marine Forces Reserve
ADNL	A-weighted Day-Night Level	$\mu\text{g}/\text{m}^3$	micrograms per cubic meter
AFRC	Armed Forces Reserve Center	MPRC	Multi-purpose Range Complex
AR	Army Regulation	MSL	Mean Sea Level
ARNG	Army National Guard	NAAQS	National Ambient Air Quality Standards
AT/FP	Anti-Terrorism/Force Protection	NAVFAC	Naval Facilities Engineering Command
BMP	Best Management Practice	NEPA	National Environmental Policy Act
BRAC	Base Realignment and Closure	NFIP	National Flood Insurance Program
CAA	Clean Air Act of 1990	NHPA	National Historic Preservation Act
CDNL	C-weighted Day-Night Level	NMFS	National Marine Fisheries Service
CEQ	Council on Environmental Quality	NO_2	Nitrogen Dioxide
CFR	Code of Federal Regulations	NO_x	Nitrogen Oxides
CIA	Central Impact Area	NPDES	National Pollutant Discharge and Elimination System
CO	Carbon Monoxide		
CRM	Cultural Resources Manager	NRCS	Natural Resources Conservation Service (US Department of Agriculture)
CWA	Clean Water Act of 1977		
DAHP	Washington Department of Archaeology and Historic Preservation	NRHP	National Register of Historic Places
dba	A-weighted decibel	O_3	Ozone
DF	Deterioration Factor	Pb	Lead
DNL	Day-Night Level	PCBs	Polychlorinated biphenyls
DoD	Department of Defense	PK15 (met)	Single event unweighted peak noise
EA	Environmental Assessment	PL	Public Law
EIS	Environmental Impact Statement	$\text{PM}_{2.5}$	Particulate Matter less than 2.5 microns
EO	Executive Order	PM_{10}	Particulate Matter less than 10 microns
ERM	Environmental Resources Management, Inc.	ppm	parts per million
FEMA	Federal Emergency Management Agency	PSD	Prevention of Significant Deterioration
FONSI	Finding of No Significant Impact	ROI	Region of Influence
gpd	gallons per day	SDZ	Surface Danger Zone
GTA	US Army "Grow the Army" Program	SF	Square Feet
HVAC	heating, ventilation, and air conditioning	SHPO	State Historic Preservation Office
ICRMP	Integrated Cultural Resources Management Plan	SO_2	Sulfur Dioxide
ICS	Incident Command System	SPCC	Spill Prevention, Control, and Countermeasure
IICEP	Interagency/Intergovernmental Coordination for Environmental Planning	TAF	Transient Adjustment Factor
JBLM	Joint Base Lewis-McChord	TSP	Total Suspended Particulates
LEED	Leadership in Energy and Environmental Design	US	United States
LUPZ	Land Use Planning Zone	USACE	United States Army Corps of Engineers
		USACHPPM	US Army Center for Health Promotion and Preventative Medicine
		USAR	United States Army Reserve

USC	United States Code
USEPA	United States Environmental Protection Agency
USFWS	United States Fish and Wildlife Service
USMC	United States Marine Corps
UST	Underground Storage Tank
UXO	Unexploded Ordnance
VMT	Vehicle Miles Traveled
VOC	Volatile Organic Compound
WDFW	Washington Department of Fish and Wildlife
WDOE	Washington Dept of Ecology
WOFM	Washington State Office of Financial Management
WSDOT	Washington State Department Of Transportation
WWTP	Wastewater Treatment Plant
YTC	Yakima Training Center
YRCAA	Yakima Regional Clean Air Agency

1 **1.0 PURPOSE AND NEED**

2 **1.1 INTRODUCTION**

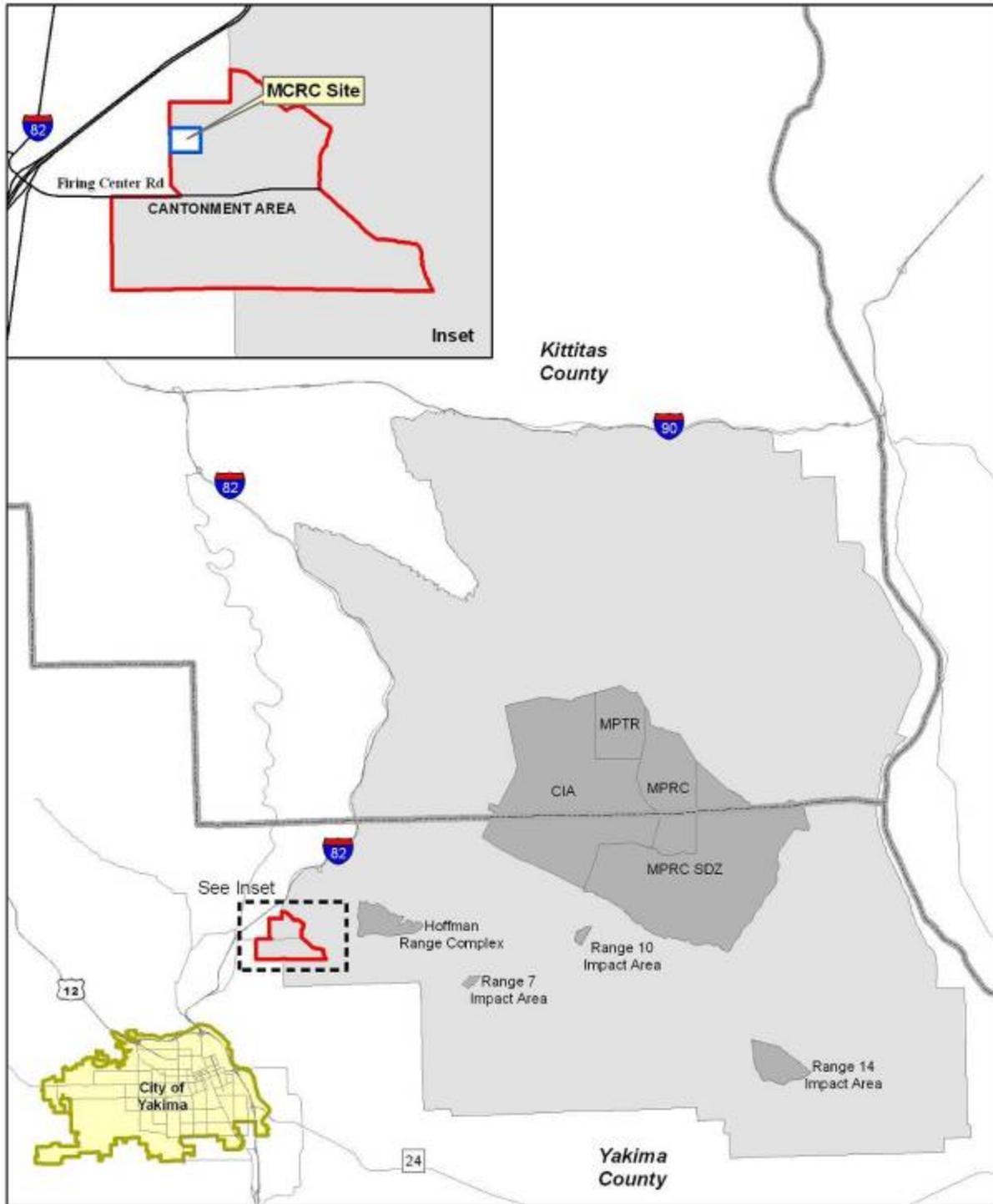
3 The Marine Forces Reserve (MFR) proposes to construct a new Marine Corps Reserve Center (MCRC)
4 that will provide combat vehicle maintenance facilities, vehicle holding sheds, tactical vehicle parking
5 areas, wash racks, security fences, and a reserve training center for MFR Company B, 4th Tank Battalion
6 (herein referred to as Company B). The proposed location for the MCRC is at the Joint Base Lewis-
7 McChord (JBLM) Yakima Training Center (YTC), north of the City of Yakima, Washington (Figures 1-
8 1, 1-2, and 1-3).

9 Company B presently leases its vehicle maintenance facility at YTC from the US Army and shares that
10 facility with the Army National Guard (ARNG) (Figure 1-3). However, its existing MCRC is located in
11 the City of Yakima, Washington, approximately 12 miles (via road) south of the YTC. The construction
12 of a new MCRC at YTC would consolidate Company B's assets in one location (herein referred to as the
13 "MCRC Site"). This would improve safety, security, training efficacy, and cost effectiveness.



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Figure 1-1. Regional Location Map

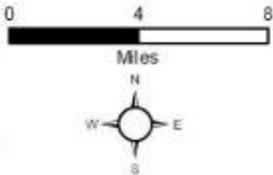


Yakima MRC Environmental Assessment

Legend

- YTC
- City of Yakima
- Ranges and Impact Areas*
- County Boundaries
- Cantonment Area

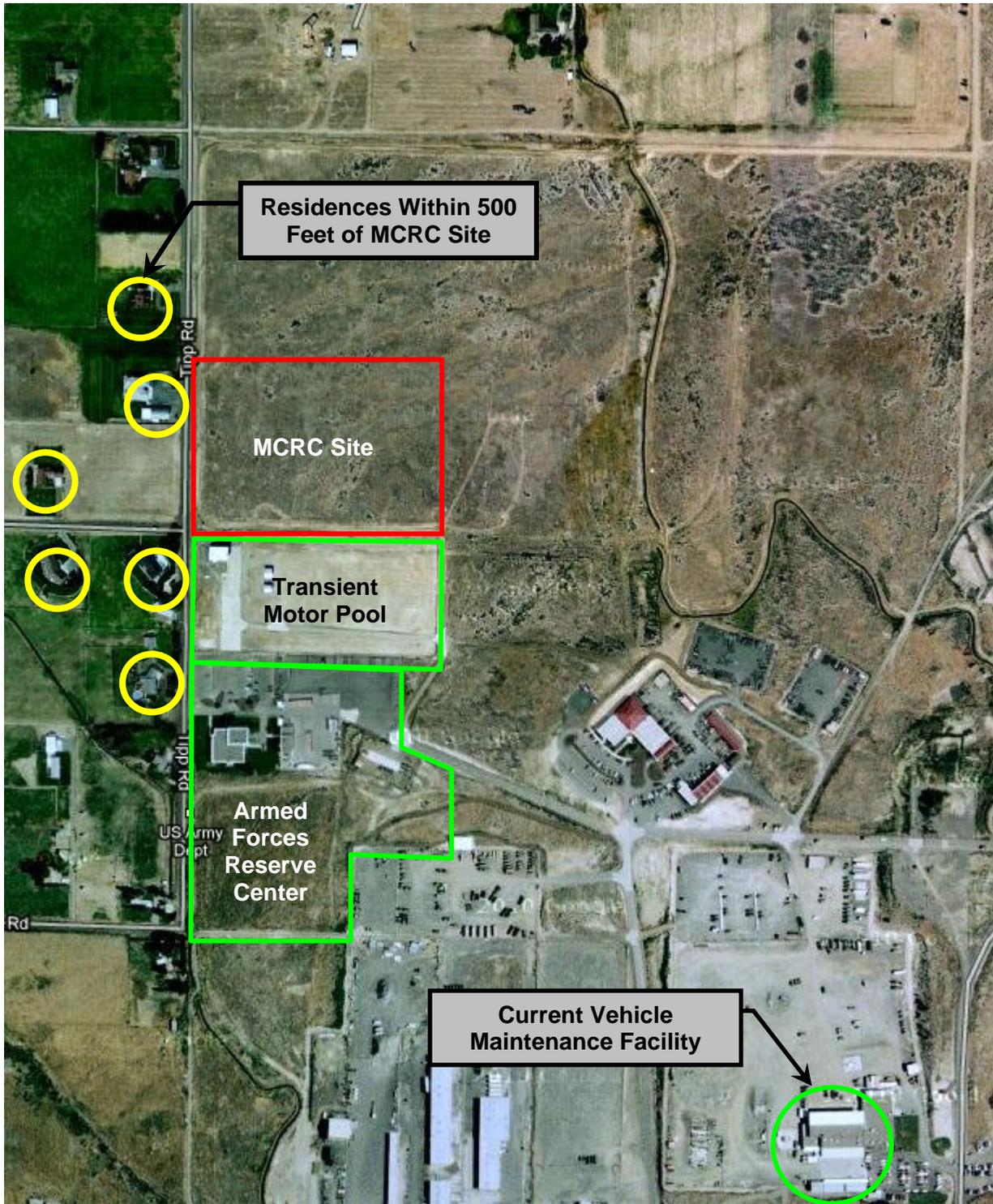
* Ranges and Impact Areas
 CIA: Central Impact Area
 MPRC: Multi-Purpose Range Complx
 MPTR: Multi-Purpose Training Range
 SDZ: Surface Danger Zone



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Figure 1-2. Yakima Training Center Facilities



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Figure 1-3. Location of Proposed MFCRC Site

1 **1.2 BACKGROUND**

2 **1.2.1 Marine Forces Reserve**

3 The MFR is the reserve component of the United States Marine Corps (USMC), and is its largest
4 command. The mission of MFR is to augment and reinforce active Marine forces in time of war, national
5 emergencies, and contingency operations, and to provide personnel and operational temporary relief for
6 the active forces in peacetime. It is organized, administered, trained, and supplied under the direction of
7 the Commandant of the Marine Corps. To support the Active Component Marines Corps, MFR must train
8 for irregular warfare, combined arms maneuvers, mountain warfare, amphibious operations, and jungle
9 warfare.

10 Individual reservists in MFR are placed into three categories: Ready Reserve, Standby Reserve, and
11 Retired Reserve. The Ready Reserve consists of units and individual reservists subject to call-up by the
12 President. The Standby Reserve is composed of individuals who retain their military affiliation, but are
13 not part of the Ready Reserve because they have a temporary disability, hardship, or have completed their
14 active-duty commitment but are still under contract. Standby Reserve members do not train and are not in
15 units. The Retired Reserve is composed of individuals who have been honorably retired.

16 Within the Ready Reserve, there is a Selected Reserve composed of units manned and equipped to serve
17 as required. Their members are "drilling" reservists who perform regularly scheduled training of 48 paid
18 drill or training assemblies and perform Annual Training 14 days per year.

19 **1.2.2 Company B**

20 Company B is part of the Ready Reserve, and is a self sustaining, autonomous command capable of
21 completing all tasks associated with the regular Marine Corps force. When necessary, it provides combat
22 ready tank crews, units, and individual Marines to reinforce the active component in support of current
23 and future contingency requirements.

24 Company B has an authorized strength of 133 personnel, including ten active-duty personnel (nine of
25 whom are based at the downtown Yakima MCRC) and approximately 123 reservists. Approximately half
26 of the reservists primarily work at YTC and only occasionally use the downtown reserve center. The
27 remaining reservists are communications and administrative staff who primarily work at the downtown
28 reserve center (Rains 2010).

29 **1.2.3 Yakima Training Center (YTC)**

30 YTC is located in Kittitas and Yakima counties, Washington, northeast of the City of Yakima (Figure 1-
31 1). It is a sub-installation of Joint Base Lewis–McChord (JBLM). YTC was originally established as an
32 anti-aircraft firing range in 1942. Military training activities have diversified since World War II and have
33 included infantry, gunnery, tracked and wheeled vehicle, and parachute training. The mission of YTC is
34 to support realistic, combined arms, joint, and coalition forces training for US and allied military units. It
35 also sustains unit readiness by maintaining maneuver areas and range complexes capable of meeting
36 training requirements for Reserve Component forces.

1 The principal users of YTC are active-duty Army units and units of the Washington ARNG. YTC is also
2 used by units of the US Army Reserve (USAR), US Air Force, Navy, and Coast Guard, local and federal
3 law enforcement, and forces from Canada, Japan, and other allied nations (USACE 2007). Currently,
4 YTC supports cross-country maneuvers and live-fire training operations.

5 YTC encompasses 327,231 acres of land and has approximately 500 permanent employees (USACE
6 2007). The YTC Cantonment Area (Figure 1-2) consists of 1,010 acres, and includes transient residential,
7 administrative, commercial, light industrial uses, and open space. The Cantonment Area contains barracks
8 to provide temporary housing for up to 2,500 personnel, but does not currently contain any permanent
9 military housing. YTC typically provides training for approximately 2,200 personnel at any given time
10 (US Army 2010). The proposed location for the new MCRC is a 12.5 acre site located within the
11 Cantonment Area (Figures 1-2 and 1-3).

12 Outside of the Cantonment Area, the remaining acreage at YTC is dedicated to training areas and firing
13 ranges. Ordnance delivery is authorized in the Central Impact Area (CIA), the Multi-purpose Range
14 Complex (MPRC), and the MPRC Surface Danger Zone (SDZ) (shown in Figure 1-2). The CIA and
15 MPRC are approved for conventional and tactical weapons deliveries. The CIA is used primarily for tank,
16 artillery, and infantry gunnery. The MPRC is a tank and infantry firing range consisting of numerous
17 remotely controlled moving and pop-up targets.

18 **1.3 PURPOSE AND NEED FOR PROPOSED ACTION**

19 The purpose of the Proposed Action is to construct a new training facility and combat vehicle
20 maintenance facility for Company B at YTC. The Proposed Action is needed in order to provide
21 Company B with the necessary facilities to meet its training mission requirements, consolidate its
22 operational assets, and maintain its combat readiness.

23 Company B presently leases its vehicle maintenance facilities at YTC from the US Army and shares that
24 facility with the ARNG (Figure 1-3). The leased structure was constructed for wheeled vehicles. As a
25 result, to use the work bays for tank maintenance requires selective placement of the tank in order to
26 remove the turret, gun mount, gun, and power supply. The facility can only accommodate a single tank in
27 one of the three bays (Figure 1-4). Neither of the remaining two bays is configured in the optimum
28 manner for Company B's needs. One has been converted to use for secure tool storage, while the other is
29 used for wheeled vehicle maintenance. There is no proper power hook-up or tracked vehicle storage
30 available for the MFR at the shared maintenance facility. Instead, extension cords run from inside the
31 shop to the tanks. Tanks must be stored in a confined area adjacent to the building, but this does not allow
32 for efficient access to individual vehicles; furthermore, equipment and operations are exposed to extreme
33 weather.



Figure 1-4. Tank in a Work Bay at the MFR/ARNG Maintenance Facility at YTC

The existing MCRC for Company B is located in the City of Yakima, Washington, 12 miles (via road) south of YTC (Figures 1-5 and 1-6). The MCRC in downtown Yakima houses administrative offices, a drill hall, classrooms, and the weapons vault. The split location between the maintenance facility at YTC and the MCRC in downtown Yakima is problematic because it:

- Results in an inefficient use of operating funds and man-hours commuting from the MCRC in downtown Yakima to YTC where tank maintenance and training occur; and
- Compromises security, logistics, and safety whenever weapons are transported from the MCRC, where the weapons vault is located, to the YTC for training exercises.

1.3.1 Anti Terrorist Force Protection

Unified Facilities Criteria 4-010-01 (DoD 2007) establishes criteria and mandatory Anti-Terrorism/Force Protection (AT/FP) standards for new and existing buildings. It is a Department of Defense (DoD)-wide security program that was developed to protect service members, civilian employees, family members, facilities, and equipment from terrorist attacks. The AT/FP standards describe necessary equipment and facilities to stop vehicular attacks and prevent unauthorized entry to an installation.



1
2 **Figure 1-5. Location of the Existing MCRC in the City of Yakima and the Proposed MCRC at YTC**



3
4 **Figure 1-6. Aerial Photograph of the Existing MCRC in the City of Yakima**

1 The purpose of these standards is to minimize the possibility of mass casualties and establish a level of
2 protection against terrorist attacks. These standards are mandatory for all new military construction. In
3 addition, any building constructed prior to 2004 that requires renovations, modifications, repairs, and
4 restorations in excess of 50 percent of its replacement cost must similarly comply with these standards.
5 The present MCRC in Yakima does not meet AT/FP standards, which places MFR personnel at greater
6 risks from terrorist attacks.

7 **1.4 THE ENVIRONMENTAL REVIEW PROCESS**

8 **1.4.1 The National Environmental Policy Act**

9 The National Environmental Policy Act (NEPA) of 1969 (42 US Code [USC] 4321-47, 1982) requires
10 consideration of environmental issues in federal agency planning and decision making. Under NEPA,
11 federal agencies must prepare an Environmental Assessment (EA) or Environmental Impact Statement
12 (EIS) for any federal action, except those actions that are determined to be “categorically excluded” from
13 further analysis.

14 An EIS is prepared for those federal actions that may significantly affect the quality of the natural or
15 human environment.² An EA is a concise public document that provides sufficient analysis for
16 determining whether the potential environmental impacts of a Proposed Action are significant—resulting
17 in the preparation of an EIS—or not significant, resulting in the preparation of a Finding of No
18 Significant Impact (FONSI). Thus, if the MFR were to determine that the Proposed Action would have a
19 significant impact on the quality of the natural or human environment, an EIS would be prepared.

20 The intent of this EA is to assess the potential environmental effects of the construction of a new MCRC
21 for Company B at YTC. The MFR is the decision maker with regard to the Proposed Action.
22 Accordingly, information and analyses documented in this EA will be used to support the MFR in making
23 one of three decisions: 1) a FONSI is appropriate, 2) a FONSI is not appropriate and preparation of an
24 EIS is required, and 3) a FONSI is not appropriate and the Proposed Action should not proceed.

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

- 27 • The Council on Environmental Quality (CEQ) regulations, as contained in 40 Code of Federal
28 Regulations (CFR), Parts 1500 to 1508 (1986), which direct federal agencies on how to
29 implement the provisions of NEPA; and
- 30 • Marine Corps Order P5090.2A, Change 2, Chapter 12 (2008), which documents USMC internal
31 operating instructions for implementing the provisions of NEPA.

² The term “significantly” or “significant” in this EA applied as per Section 1508.27 of the Council on Environmental Quality (CEQ) regulations for implementing NEPA. This definition considers both the context and intensity of the effect.

1 **1.4.2 Scoping and Alternatives Development**

2 A project kickoff meeting was held on 8 March 2010 at MFR Headquarters in New Orleans, Louisiana.
3 This meeting was attended by representatives from MFR Headquarters, Naval Facilities Engineering
4 Command (NAVFAC)–Atlantic, and Environmental Resources Management, Inc. (ERM), the contractor
5 preparing the EA. The team determined the scope of environmental issues to be addressed in the EA,
6 along with alternatives to the Proposed Action. A separate scoping meeting was held at YTC on 25 May
7 2010. This meeting was attended by representatives from MFR Headquarters, NAVFAC–Atlantic, and
8 ERM.

9 **1.4.3 Agency Coordination and Permit Requirements**

10 In addition to NEPA, other laws, regulations, permits, and licenses may be applicable to the proposed new
11 facilities; specifically, the Proposed Action may require (responsible agency indicated in parentheses):

- 12 • Consultation per Section 106 National Historic Preservation Act (Washington State Historic
13 Preservation Office [SHPO])
- 14 • National Pollutant Discharge Elimination System (NPDES) permit for stormwater discharge
15 (United States Environmental Protection Agency [USEPA]);
- 16 • Air Quality permit (Yakima Regional Clean Air Agency [YRCAA]);
- 17 • Section 7 consultation per the Endangered Species Act (United States Fish and Wildlife Service
18 [USFWS]); and
- 19 • AT/FP security compliance in accordance with Marine Corps Order P5530.14 (USMC 2008).

20 As part of the Interagency/Intergovernmental Coordination for Environmental Planning (IICEP) process,
21 MFR sent consultation letters to each of these agencies, as well as the governments of Yakima and
22 Kittitas Counties, the National Marine Fisheries Service (NMFS), and the Washington Department of
23 Fish and Wildlife (WDFW) on 2 September 2010. These letters described the Proposed Action (see
24 Section 2.1) and requested responses within 30 days. No responses to the September 2010 consultation
25 letters were received.

26 A second round of consultation letters were sent to USFWS, SHPO, and representatives of the Yakama
27 and Wanapum Tribes on 15 February 2011, requesting responses within 45 days. These letters and
28 responses received are included in Appendix A.³

29

³ USFWS provided the following response: “The ESA does not provide a mechanism for [USFWS] to concur with a “no effect” determination, but we see no reason to disagree with [the EA’s] findings...Consider this email as both a receipt of your February 15 consultation letter and [confirmation] that we have no objection to your determination” (Krupka 2011).

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2.0 PROPOSED ACTION AND ALTERNATIVES

CEQ's *Regulations for Implementing the Procedural Provisions of the National Environmental Policy Act* (40 CFR 1500-1508, 1986) establish a number of policies for federal agencies, including "using the NEPA process to identify and assess reasonable alternatives to the Proposed Action that would avoid or minimize adverse effects of these actions on the quality of the human environment" (40 CFR 1500.2 (e), 1986). This chapter provides a detailed description of the Proposed Action and a description of project alternatives, including alternatives eliminated from detailed analysis.

2.1 DESCRIPTION OF PROPOSED ACTION

The MFR proposes to secure a real estate agreement with the Department of the Army to construct a new MCRC on a 12.5 acre undeveloped site within the YTC Cantonment Area (Figure 1-3). The MCRC would include the following facilities:

- Reserve training center (30,193 square feet [SF]), which would consist of a one-story steel framed structure with concrete foundation and floors, masonry walls, sloped metal roof, fire protection and heating, ventilation, and air conditioning (HVAC) systems constructed to meet AT/FP and Leadership in Energy and Environmental Design (LEED) Silver standards.⁴ The training center would include a specially constructed weapon storage area, assembly hall, classrooms, locker and shower facilities, and workshops;
- Combat vehicle maintenance facility (6,351 SF), consisting of a one-story building with built in compressed air, vehicle lube, and vehicle exhaust systems, and a bridge crane with crane rails;
- Vehicle holding shed (4,004 SF), which would also be used for miscellaneous equipment storage;
- Covered parking area (6,405 SF)
- Tactical vehicle parking area for wheeled and tracked vehicles (approximately 23,551 SF), which would be at least partially covered by a free standing, cantilevered, steel structure open on all sides with a metal roof; and
- Other ancillary facilities, including a wash rack for wheeled and tracked vehicles with an oil/water separator, utility (e.g., water, sewer, gas, electric) extensions, vehicular access improvements from the adjoining road and to the adjacent tank trail, hazardous material storage (consisting of enclosed, separate structures for storage of hazardous materials, flammable storage for any flammable hazardous materials, and a satellite site for accumulation and storage of hazardous waste), storage container pads, security fencing and gates, landscaping, and a stormwater retention pond (to be maintained in good working condition).

⁴ LEED is third-party certification system developed and administered by the US Green Building Council (USGBC). LEED verifies the degree to which "a building or community was designed and built using strategies aimed at improving performance across [metrics such as] water efficiency, CO₂ emissions reduction, improved indoor environmental quality, and stewardship of resources and sensitivity to their impacts" (USGBC 2010). LEED Silver is the third-highest level of certification offered by USGBC.

1 Site preparation would entail grubbing, clearing, and leveling the area for construction. There is no
2 evidence that the MCRC Site has ever been developed or formally used as a range, although some debris
3 piles and other evidence of past activity are present (ERM 2010). The MFR would follow all applicable
4 federal laws and regulations designed to protect natural and cultural resources. Prior to construction, MFR
5 would acquire all applicable permits as discussed in Section 1.4.3.

6 MFR would also prepare a landscaping plan for the portions of the MCRC Site not proposed for
7 buildings, structures, or paved surfaces. The landscaping plan would emphasize the use of native plant
8 species, and would support control of erosion, stormwater runoff, and noxious weeds, minimization of
9 water demand, and creation of a visually appealing appearance consistent with the surrounding area and
10 YTC facilities.

11 The design for the vehicle wash rack at the proposed MCRC has not been selected. If the wash rack is
12 located indoors, it would be plumbed to YTC's sewer system and WWTP. If an outdoor wash rack design
13 (e.g., a facility that is not enclosed or covered) is chosen, a closed-loop system would be installed, to
14 avoid transmission of stormwater to the YTC sewer and WWTP.

15 From an operations perspective, the Proposed Action would result in minimal changes in the level or type
16 of training that Company B conducts at YTC, and no changes to the level or type of cross-country
17 maneuvers, live-fire training operations, and vehicle maintenance activities. Company B's authorized
18 strength is 133 personnel, including ten active-duty personnel. Under the preferred action, Company B
19 would be reassigned to YTC. As a result, nine active-duty administrative personnel and approximately 62
20 reservists who are primarily based at the downtown MCRC would instead report to the proposed MCRC
21 at YTC for all periodic training activities (i.e., 48 drill/training assemblies per year) and annual 14-day
22 training periods (see Section 1.2).

23 **2.2 ALTERNATIVES CONSIDERED BUT DISMISSED**

24 Additional alternatives for fulfilling the purpose and need of the Proposed Action were considered but
25 dismissed from further study. One considered upgrading the downtown Yakima MCRC to AT/FP
26 standards while continuing to share maintenance facilities with the Washington ARNG at YTC. While
27 this alternative potentially resolved the issue of meeting AT/FP standards for the MCRC in downtown
28 Yakima, it did not consolidate assets and operations in one location. This alternative also did not solve the
29 problem of logistics and security associated with transporting personnel and weapons to YTC or the
30 maintenance inefficiencies of leasing inadequate space and facilities from the US Army. This alternative
31 was therefore dismissed from further consideration in this EA

32 The second alternative considered consolidating vehicle maintenance activities at the downtown Yakima
33 MCRC and upgrading that facility to meet AT/FP standards. Company B uses the YTC range for cross-
34 country maneuvers and live-fire training operations. The logistical challenges and risks associated with
35 transporting tanks in addition to weapons, ammunition, and personnel from downtown Yakima to the
36 YTC range would be far more significant and costly than in the Preferred Alternative or the other

1 alternative described in this section. In addition, transportation time from downtown Yakima to YTC
2 would reduce available training time. Therefore, this alternative was dismissed from further analysis.

3 **2.3 NO ACTION ALTERNATIVE**

4 Under the No Action Alternative, the limitations placed on Company B's ability to efficiently train and
5 maintain its combat vehicles would persist. This would expose personnel to greater risks from terrorist
6 attacks and have an overall detrimental affect on combat readiness. For these reasons, the No Action
7 Alternative is not considered a reasonable alternative. However, CEQ guidelines stipulate that the No
8 Action Alternative be analyzed to assess any environmental consequences that may occur if the Proposed
9 Action is not implemented. Therefore, this alternative is carried forward for analysis in this EA.

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1 **3.0 AFFECTED ENVIRONMENT**

2 This chapter provides a description of the environment that would be affected by the Proposed Action, as
3 required by CEQ regulations for implementing NEPA (40 CFR 1502.15). The description focuses on
4 those features of the environment that would potentially be affected by the Proposed Action at YTC.

5 The 327,231-acre YTC is located in Yakima and Kittitas Counties, and is bordered on the north by
6 Interstate 90 (I-90), on the east by the Columbia River, on the south by private lands, and on the west by
7 private lands and I-82. YTC is located in the Columbia Basin, an area characterized by hot, dry summers
8 and cool winters. The region is marked by undulating terrain with several major northwest-to-southeast
9 ridges separated by large valleys. The prevailing winds are generally from the southwest. Most of the
10 precipitation in the area comes in late fall and early winter storms.

11 **3.1 LAND USE**

12 **3.1.1 YTC Land Use**

13 The principal users of YTC are active-duty US Army units and units of the Washington ARNG. YTC is
14 also used by units of the USAR, US Air Force, Navy, and Coast Guard, local and federal law
15 enforcement, and forces from Canada, Japan, and other allied nations. Current land uses at YTC include a
16 Cantonment Area (1,010 acres) with transient residential, administrative, commercial, and light industrial
17 facilities and open space (USACE 2007). The Cantonment Area contains barracks to provide temporary
18 housing for up to 2,500 personnel, but currently contains no permanent housing (US Army 2010).

19 The remaining portion of YTC (approximately 326,221 acres) is dedicated to training areas and firing
20 ranges, including maneuver corridors, impact areas, ranges, drop zones, and bivouac areas. Ranges that
21 provide gunnery training and airfields that accommodate rotary wing aircraft and tactical assault
22 capabilities also are located at YTC (USACE 2007).

23 The proposed MCRC Site is located in the northern portion of the Cantonment Area, approximately 600
24 feet north of the Armed Forces Reserve Center (AFRC—Figure 1-3).⁵ The site is near YTC facilities to
25 the north, east, and south, and Tipp Road (a public road outside of the YTC boundary) to the west. A U.S.
26 Army transient motor pool borders the MCRC Site to the south, and undeveloped portions of the
27 Cantonment Area are located to the north and east. Private residential properties are located along the
28 west side of Tipp Road across from the Site (Figure 1-3). There is no evidence that the MCRC Site has
29 ever been developed, although some debris piles and other evidence of previous activity are present
30 (ERM 2010).

⁵ The AFRC was part of the Proposed Action evaluated in *Yakima Training Center, Washington Base Realignment and Closure (BRAC) Actions, Final Environmental Assessment*. (USACE 2007).

1 **3.1.2 Surrounding Land Use**

2 The YTC is located in Kittitas and Yakima counties in Washington State. Although the YTC is partially
3 located within the City of Yakima metropolitan area, it is primarily surrounded by rural land uses,
4 including commercial agriculture and scattered rural residences (USACE 2007, Yakima County 2010a).

5 The MCRC Site and part of YTC is located in Yakima County. Yakima County designates its entire
6 portion of YTC as “Federal Land.” Private land use adjacent to YTC in the vicinity of the MCRC Site is
7 in the County’s “Valley Rural” zoning district, which permits maximum density of approximately one
8 dwelling unit per five acres (Yakima County 2010b). Yakima County’s 2015 Comprehensive Plan
9 designations for the land surrounding the Cantonment Area include “Rural Remote” and “Rural Self-
10 Sufficient,” designations that are consistent with Valley Rural zoning and overall low-intensity land use
11 pattern near the Cantonment Area (Yakima County 2010a). The portion of YTC in Kittitas County is in
12 the County’s Commercial Agriculture Zone and Commercial Agriculture land use designation (Kittitas
13 County 2010).

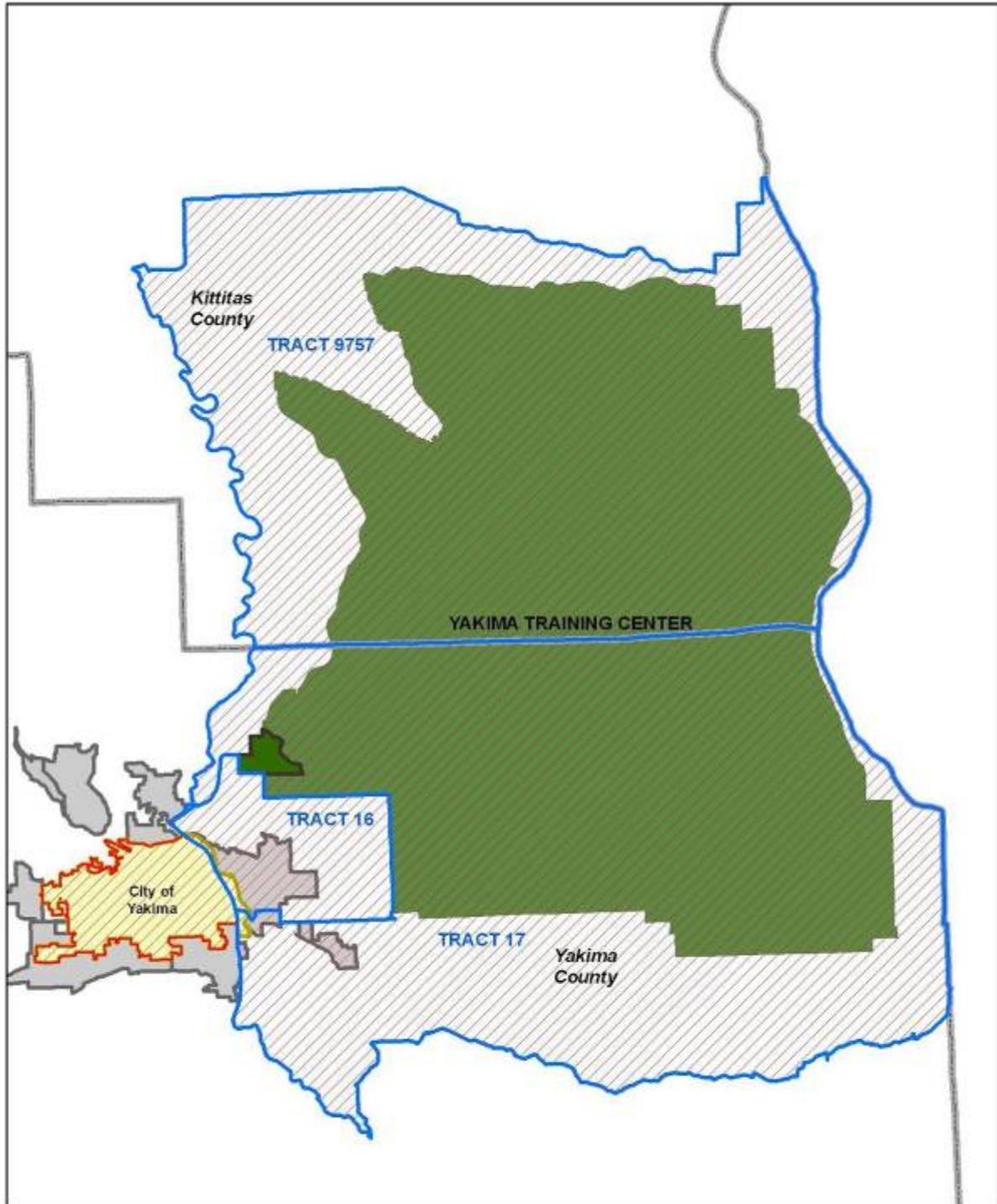
14 The visual environment surrounding the MCRC Site is consistent with these rural/residential zoning and
15 land use categories. To the west, across Tipp Road, the MCRC Site offers views of rural residences and
16 the Yakima River valley. To the northeast, east, and southeast, grasslands and topographic features such
17 as the Yakima and Umtanum ridges are prominent.

18 **3.2 SOCIOECONOMICS**

19 Socioeconomics comprise the basic attributes of population, income, and employment conditions of a
20 community or area of interest. These attributes are evaluated within a region of influence (ROI), the
21 geographic area within which socioeconomic conditions could be affected by changes in the rate of
22 population growth, demographic characteristics, or employment caused by the Proposed Action. The ROI
23 considered in this EA includes Census Tract 9757 in Kittitas County, Census Tracts 16 and 17 in Yakima
24 County, and the City of Yakima (see Figure 3-1). Where information is not available at the Census Tract
25 level, census data for the entirety of Kittitas and/or Yakima County (both of which are distinct Census
26 geographies) are used for characterizing the ROI.

27 In addition to these characteristics, populations of special concern, as addressed by Executive Order (EO)
28 12898 (*Federal Actions to Address Environmental Justice in Minority Populations and Low-income*
29 *Populations, February 1994*) and EO 13045 (*Protection of Children from Environmental Health Risks*
30 *and Safety Risks, April 1997*), are identified in this section and are assessed for potential environmental
31 justice impacts (see Section 3.2.3).

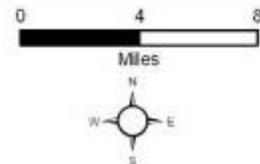
32 As previously discussed, YTC is located partially within the Yakima Metropolitan Statistical Area, which
33 comprises Yakima County. In 2010, Yakima County was the 7th most populous county in the state, with
34 the 2nd greatest land area (Washington Office of Financial Management [WOFM] 2010). Kittitas County
35 ranked 25th in population in 2005 and 8th in land area (WOFM 2010). YTC does not contain any
36 permanent military housing, only temporary quarters (bivouac) for training activities. Outside of YTC



Yakima MCR Environmental Assessment

Legend

- Region of Influence (ROI)
- Census Tracts
- City of Yakima
- Other Municipalities
- YTC
- Cantonment Area
- County Boundaries



1
2

Figure 3-1. Region of Influence and Census Geography

1 boundaries, the entire Cantonment Area is bordered by approximately 19 private residences (USACE
 2 2007), although only six residences are within 500 feet of the MCRC Site.

3 **3.2.1 Demographics**

4 Table 3-1 shows the overall population profile of the ROI (the three Census Tracts, plus the City of
 5 Yakima). The population is largely urban, with slightly more females than males, especially in older age
 6 cohorts. The 30-to-59 cohort was the largest in the ROI, comprising more than one-third of the total
 7 population.

8 **Table 3-1. 2000 Population Profile of the ROI**

	Census Tracts ¹		City of Yakima		Total	
	Male	Female	Male	Female	Male	Female
Total Population	9,156	9,236	35,125	36,720	44,281	45,956
0-17 Years	2,498	2,465	10,748	10,393	13,246	12,858
18-29 Years	1,263	1,158	6,760	6,477	8,023	7,635
30-59 Years	3,953	4,048	12,795	12,343	16,748	16,391
60+ Years	1,442	1,565	4,822	7,507	6,264	9,072
Urban Population	7,312		71,817		79,129	
Percent Urban	39.8%		>99%		87.7%	
Rural Population	11,080		28		11,108	
Percent Rural	60.2%		<1%		12.3%	

Source: 2000 US Census of Population and Housing

Notes:

¹: Includes the Census Tracts in the ROI: Tracts 16 and 17 in Yakima County and Tract 9757 in Kittitas County.

9 As shown in Table 3-2, population within the ROI, which includes the YTC, increased markedly between
 10 1990 and 2000, but slowed from 2000 to 2009. Population growth trends in the ROI generally mirrored
 11 statewide trends for the same time period.

12 **Table 3-2. Population Trends 1990-2030**

Jurisdiction	Population				Population Change, 1990-2000 (percentage)	Population Change, 2000-2009 (percentage)	Projected Population Change, 2009-2030 (percentage)
	1990 ¹	2000 ²	2009 ³	2030 ⁴			
City of Yakima	54,827	71,845	85,832	n/a	31.0%	19.5%	n/a
Kittitas County	26,725	33,362	39,532	48,942	24.8%	18.5%	23.8%
Yakima County	188,823	222,581	239,054	300,362	17.9%	7.4%	25.6%
Washington State	4,866,692	5,894,121	6,664,195	8,509,161	21.1%	13.1%	27.7%

Sources:

¹: 1990 US Census of Population and Housing.

²: 2000 US Census of Population and Housing.

³: US Census Bureau, County Population Estimates with Sex, 6 Race Groups, and Hispanic Origin.

⁴: WOFM, Washington Growth Management Population Projections for Counties: 2000 to 2030.

1 **3.2.2 Economic Characteristics**

2 **3.2.2.1 Income**

3 Median household and family incomes and the percentages of persons living below the poverty level, as
 4 reported in the 2000 Census and the US Census Bureau’s American Community Survey for 2007 (the
 5 most recent year for which data are available) are shown in Table 3-3. Each year, the U.S. Census Bureau
 6 defines the national poverty thresholds, which are measured in terms of household income (varying
 7 depending on the number of persons in the household). Individuals falling below the poverty threshold
 8 (\$21,027 for a household of four, with two children, in 2007) are considered low income individuals (US
 9 Census Bureau 2010).

10 **Table 3-3. Income and Poverty**

Jurisdiction	2000			
	Median Household Income	Median Family Income	Percent of Persons Below Poverty	Per Capita Income
ROI ¹	\$35,502	\$38,768	19.5%	\$16,642
Census Tract 9757	\$36,642	\$40,357	13.3%	\$20,399
Census Tract 16	\$47,239	\$54,583	7.7%	\$21,262
Census Tract 17	\$41,514	\$45,015	11.7%	\$16,441
City of Yakima	\$29,475	\$34,798	22.4%	\$15,920
Kittitas County	\$32,546	\$46,057	19.6%	\$18,928
Yakima County	\$34,828	\$39,746	19.7%	\$15,606
Washington State	\$45,776	\$53,760	10.6%	\$22,973
Jurisdiction	2007			
	Median Household Income	Median Family Income	Percent of Persons Below Poverty	Per Capita Income
City of Yakima	\$40,879	\$49,085	18.5%	\$21,017
Kittitas County	\$42,305	\$59,858	21.8%	\$24,102
Yakima County	\$43,639	\$49,348	19.7%	\$19,183
Washington State	\$57,234	\$69,162	11.6%	\$29,927

Source: 2000 US Census of Population and Housing; 2007 American Community Survey

Notes:

¹: Estimated based on share of population and households in each of the three tracts that comprise the ROI.

11 Poverty levels in the ROI were higher than the state as a whole in 2000 and 2007, but were comparable to
 12 the underlying poverty rates in Yakima and Kittitas Counties. Incomes in the ROI were lower than in the
 13 state as a whole, but were comparable to incomes in Yakima and Kittitas Counties.

14 **3.2.2.1 Personal Income and Industrial Earnings**

15 Table 3-4 summarizes information about personal income and earnings in the ROI.⁶ Overall personal
 16 income in the ROI increased by nearly 39 percent between 2001 and 2008. Kittitas County saw a slightly
 17 larger percent increase in income, although average personal income in Yakima County was still
 18 significantly higher than in Kittitas County. Overall earnings for the ROI increased 41 percent during the

⁶ As represented in Sections 3.2.2.1 and 3.2.2.2 by Yakima and Kittitas Counties combined. BEA and Bureau of Labor Statistics (BLS) data cited in these sections are only available at the County level.

1 same time period. Again, earnings in Kittitas County grew more rapidly, but earnings in Yakima County
 2 were substantially higher (BEA 2008a). During this period, farm earnings grew especially rapidly,
 3 although they still comprised less than 15 percent of total earnings.

4 **Table 3-4. Personal Income and Industrial Earnings in the ROI**

Geography and Year		Personal Income (\$M)	Earnings (\$M)		
			Total	Farm	Nonfarm
2001 ¹	ROI	\$6,065.9	\$4,057.0	\$428.0	\$3,628.9
	Yakima County	\$5,227.4	\$3,570.9	\$396.8	\$3,174.0
	Kittitas County	\$838.5	\$486.1	\$31.2	\$454.9
2008 ¹	ROI	\$8,421.0	\$5,733.8	\$803.9	\$4,929.9
	Yakima County	\$7,201.8	\$4,995.9	\$754.3	\$4,241.6
	Kittitas County	\$1,219.2	\$737.9	\$49.6	\$688.3
Percent Change, 2001-8	ROI	38.8%	41.3%	87.8%	35.8%
	Yakima County	37.8%	39.9%	90.1%	33.6%
	Kittitas County	45.4%	51.8%	59.2%	51.3%

Source: Bureau of Economic Analysis, Table CA 05, Personal Income by Major Source and Earnings by Industry.
<http://www.bea.gov/regional/reis>

Notes:

¹: 2001 is the earliest year for which data are available; 2008 is the most recent year for which data are available.

5 When analyzed by industry, the largest increases in earnings were observed in government (\$366 million,
 6 or 43 percent); health care and social assistance (\$243 million, or 47 percent); and construction (\$130
 7 million, or 69 percent). Only manufacturing (-\$31 million, or -6 percent) and real estate (-\$7 million, or -
 8 11 percent) had decreased industry earnings over the period. Military earnings in the combined counties
 9 increased 136 percent to \$26.8 million (BEA 2008a).

10 3.2.2.2 Employment and Labor Force

11 Total full-time and part-time employment increased approximately 11 percent (from 130,213 to 144,528)
 12 from 2001 to 2008 in Kittitas and Yakima Counties combined. Health care, (2,930 jobs, or 21 percent),
 13 government (2,287 jobs, or 11 percent), and construction (1,870 jobs, or 35 percent) added the largest
 14 number of new jobs during this period (BEA 2008b). Over that same period of time, the labor force in the
 15 ROI increased by more than 17,000 people, while the unemployment rate fell 2.5 percent from 9.0 percent
 16 to 6.5 percent (BLS 2001, 2008).

17 3.2.3 Race and Environmental Justice

18 3.2.3.1 Race and Ethnicity

19 Table 3-5 shows the racial and ethnic make-up of the ROI. Categories of race used by the US Census
 20 include White; Black or African American; American Indian or Alaska Native; Asian; Native Hawaiian
 21 or other Pacific Islander; and Persons of More than One Race (US Census 2002). The Census Bureau
 22 defines ethnicity as either being of Hispanic origin or not being of Hispanic origin (USACE 2007). Race
 23 and ethnicity are counted separately by the Census; i.e., persons who consider themselves to be of
 24 Hispanic origin may represent more than one race.

1 As shown in Table 3-5, there has been a noticeable increase in the white population and a decrease in the
 2 non-white population in Yakima County since the 2000 Census; however, the white populations of the
 3 City of Yakima and Kittitas County have remained steady. The entire ROI and State of Washington are

4 **Table 3-5. Race and Ethnicity (Percent)**

Jurisdiction	2000							
	White		Black/African American		Non-White ¹		Hispanic	
	Num.	Pct.	Num.	Pct.	Num.	Pct.	Num.	Pct.
ROI	65,151	72.2%	1,559	1.7%	23,527	26.1%	26,937	29.9%
Census Tract 9757	3,093	92.0%	13	0.4%	255	7.6%	301	9.0%
Census Tract 16	7,474	88.1%	75	0.9%	938	11.1%	974	11.5%
Census Tract 17	5,175	79.1%	38	0.6%	1,331	20.3%	1,449	22.1%
City of Yakima	49,409	68.8%	1,433	2.0%	21,003	29.2%	24,213	33.7%
Kittitas County	30,617	91.8%	236	0.7%	2,509	7.5%	1,668	5.0%
Yakima County	146,005	65.6%	2,157	1.0%	74,419	33.4%	79,905	35.9%
Washington State	4,821,823	81.8%	190,267	3.2%	882,031	15.0%	441,509	7.5%
Jurisdiction	2007							
	White		Black/African American		Non-White ¹		Hispanic	
	Num.	Pct.	Num.	Pct.	Num.	Pct.	Num.	Pct.
City of Yakima	58,055	67.8%	1,448	1.7%	26,100	30.5%	31,658	37.0%
Kittitas County	34,271	89.4%	438	1.1%	3,610	9.4%	59,269	6.4%
Yakima County	170,796	73.5%	2,176	0.9%	2,450	25.5%	94,442	40.7%
Washington State	5,195,047	80.5%	218,847	3.4%	1,039,189	16.1%	614,590	9.5%

Source: US Census Bureau 2002, 2009

Notes:

¹: Includes persons who indicated that they were American Indian and Alaska Native; Asian; Native Hawaiian/Pacific Islander; Other Races; or more than one race.

5 characterized by relatively large populations of individuals who do not identify themselves as either white
 6 or black. The Hispanic population of the City of Yakima and Yakima County is also substantially larger,
 7 by percentage, than the state average or that of neighboring Kittitas County.

8 3.2.3.2 Environmental Justice

9 EO 12898, (*Federal Actions to Address Environmental Justice in Minority Populations and Low-Income*
 10 *Populations*, 1994), directs federal agencies to incorporate environmental justice into their mission and
 11 activities. Federal agencies are to accomplish this by conducting programs, policies, and activities that
 12 substantially affect human health or the environment in a manner that does not exclude communities from
 13 participation in, deny communities the benefits of, or subject communities to discrimination under such
 14 actions, because of their race, color, or national origin (EO 12898, 1994). Table 3-3 above presents
 15 information on income and poverty in the ROI. Table 3-5 above presents information on race.

16 EO 13045, (*Protection of Children from Environmental Health Risks and Safety Risks*, 1997), requires
 17 each federal agency to identify and assess environmental health and safety risks to children.
 18 “Environmental health and safety risks” are defined as “risks to health or to safety that are attributable to
 19 products or substances that the child is likely to come in contact with or ingest” (EO 13045, 1997). Table

1 3-1 shows the number of children (individuals under the age of 18) in the ROI. There are no children
2 regularly present at YTC.

3 **3.3 INFRASTRUCTURE, UTILITIES, AND EMERGENCY SERVICES/MEDICAL CARE**

4 **3.3.1 Potable Water Supply**

5 Potable water for the YTC Cantonment Area is drawn from three groundwater wells and stored in three
6 aboveground water storage tanks (USACE 2007, US Army 2010). Overall summer (peak) demand for
7 water at YTC averages approximately 200,000 gallons per day (gpd), with 75 percent of that demand
8 coming from the Cantonment Area. Water is treated at the wellheads by chlorination (USACE 2007).
9 Groundwater supplies are adequate for any foreseeable demands at YTC (US Army 2010). Because the
10 MCRC Site has never been developed, it has no water supply infrastructure.

11 **3.3.2 Wastewater System**

12 YTC operates a single off-installation wastewater treatment plant (WWTP) that lies west of the
13 Cantonment Area and discharges into the Yakima River (see Figure 3-4). The WWTP provides primary
14 and secondary treatment and primarily treats domestic wastewater. YTC generates an estimated daily
15 peak flow of 150,000 gpd, compared to the WWTP's permitted discharge capacity of 720,000 gpd
16 (USACE 2007). Because the MCRC Site has never been developed, it has no wastewater infrastructure.

17 **3.3.3 Stormwater System**

18 If not properly managed, stormwater runoff from land surfaces, especially from impervious surfaces such
19 as roads, roofs, and parking areas, can cause erosion, degrade water quality, and cause downstream
20 flooding. The stormwater system serving the Cantonment Area at YTC consists of two detention basins,
21 several oil/water separators, and open ditches that convey the runoff to several industrial stormwater
22 outfalls (US Army 2010). The drainage system discharges into an intermittent stream, which then enters
23 the Yakima River downstream of Selah Creek.

24 Because the proposed MCRC Site has never been developed, it has no stormwater facilities. Precipitation
25 that falls on the site mostly infiltrates through the soil or runs off (sheet flow) to the west (ERM 2010).

26 **3.3.4 Energy**

27 Pacific Power supplies electrical power to the Cantonment Area. Cascade Natural Gas Corporation
28 supplies natural gas, the primary heating source, to YTC. The proposed MCRC would tie in to these
29 existing energy sources to meet Company B's energy needs. Diesel and propane fuel serve as backup
30 heating fuels at YTC.

31 **3.3.5 Solid Waste**

32 Refuse at YTC is collected by contract disposal services and disposed of at off-site at municipal solid
33 waste landfills. Hazardous waste is discussed in Section 3.9.

1 **3.3.6 Emergency Services/Medical Care**

2 The YTC Fire Department is located in the Cantonment Area. YTC uses the Incident Command System
3 (ICS) to maintain command and control of all emergency response scenes. ICS provides a consistent
4 means of communication, establishes lines of authority and responsibility, and provides accountability for
5 all personnel engaged in the suppression action. YTC's ICS is uniformly adopted by surrounding fire
6 districts that interact with YTC Fire Department (US Army 2010).

7 There are no health care or medical facilities at YTC other than an occupational nurse who provides basic
8 and some immediate emergency care (US Army 2010). Personnel requiring more than basic or emergency
9 care must travel to other military or civilian medical facilities.⁷ Yakima Regional Medical and Cardiac
10 Center and Yakima Valley Memorial Hospital are the closest civilian hospital facilities, located
11 approximately eight and ten miles (respectively, via road) from the Firing Center Road entrance to YTC.
12 Yakima Regional Medical and Cardiac Center is a privately-run 214-bed facility that provides a full
13 complement of medical services, including advanced neurosurgical procedures, home health and hospice,
14 and same day surgery. Yakima Valley Memorial Hospital is a 225-bed not-for-profit facility. Inpatient
15 acute care services include an advanced care unit, critical care, an emergency department, orthopedic
16 services, and surgical services.

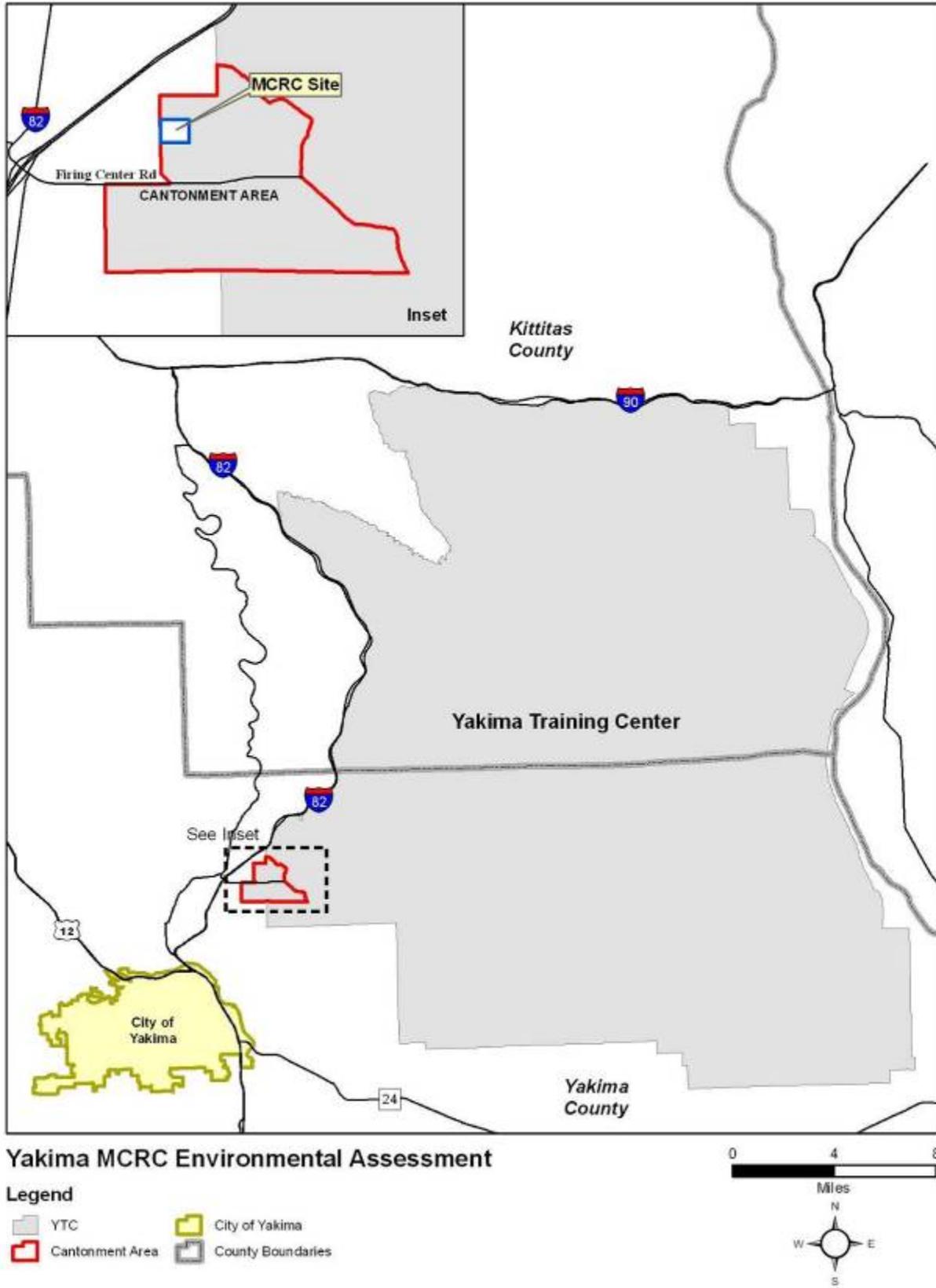
17 **3.4 TRANSPORTATION AND TRAFFIC**

18 Traffic is defined as the movement of people or vehicles through a transportation system. The volume of
19 people or vehicles moving through a transportation system has an effect on the amount of time spent
20 traveling from one point to another. Traffic is discussed in this EA because the Proposed Action would
21 change current traffic patterns by consolidating all MFR activities at YTC in lieu of the current split
22 between the City of Yakima and YTC. The major roads providing access to YTC include (Figure 3-2):

- 23 • Interstate 82, a four-lane freeway (two lanes in each direction) that forms much of the
24 installation's western border;
- 25 • Interstate 90, a four-lane freeway that runs east-west, parallel and adjacent to much of YTC's
26 northern boundary; and
- 27 • State Route 24, a two-lane arterial that runs east-west, approximately 3-5 miles south of YTC's
28 southern border.

29 Most traffic enters YTC via Firing Center Road, which intersects I-82 at Exit 26, approximately three-
30 quarters of a mile west of the YTC gate. Alternative entry points to YTC include access from I-82 at Exit
31 11 (15 miles north of the Cantonment Area), Wanapum-Huntzinger Road (Exit 136 from I-90), as well as
32 several feeder roads off State Route 24 (USACE 2007). The traffic volumes described in this section
33 include approximately 62 Company B personnel who travel to YTC for training activities. These

⁷ Specifically, Army personnel in need of more advanced medical care travel to Madigan Army Medical Center at JBLM.



1
2

Figure 3-2. Major Transportation Corridors

1 personnel typically travel first to the downtown facility to load equipment (including weapons) and then
 2 travel to YTC.

3 The Washington State Department of Transportation (WSDOT) maintains permanent traffic counters on
 4 major roads across the state, including I-82 approximately 2 miles north of Firing Center Road, and west
 5 of State Route (SR) 24 in Yakima. Existing traffic volumes in these locations are shown in Table 3-6.
 6 These traffic volumes are generally low for multi-lane freeways (by comparison, 2009 annual average
 7 daily traffic [AADT] on Interstate 5 in downtown Seattle was 92-93,000 in each direction). There are no
 8 other publicly available traffic data for the major roads serving YTC.

9 **Table 3-6. Existing Traffic Volumes near YTC, 2009**

Road	Direction	Location	AADT ¹
I-82	Eastbound	Downtown Yakima (West of SR 24)	22,988
	Westbound		22,604
I-82	Eastbound	East of Selah Creek Rest Area (north of Firing Center Road)	7,932
	Westbound		7,955

Source: WSDOT 2009.

Notes:

¹: AADT = Annual Average Daily Traffic

10 In general, traffic volumes entering YTC are low. Traffic counts conducted in 2005-6 are summarized in
 11 Table 3-7 and shown in Appendix B. In these counts, 823 vehicles entered YTC during the highest single
 12 shift (the 0600h to 1800h day shift on October 11, 2005). This equates to an average of approximately 69
 13 vehicles per hour. Separate traffic counts conducted in June 2007 on Firing Center Road indicated
 14 average weekday traffic of 810 vehicles per day entering the main gate.⁸ During the morning peak hour
 15 (0700h to 0800h), approximately 135 vehicles entered the base (US Army 2010).

16 By comparison, under ideal conditions, a two-lane (one lane each way) rural road such as Firing Center
 17 Road can safely accommodate up to 1,400 vehicles per hour in each direction (TRB 1985). Checkpoint
 18 processing rates for incoming traffic at other installations with 100 percent identification and vehicle
 19 decal check are 300 to 400 vehicles per lane per hour (USACE 2007). Thus, the one-lane YTC gate could
 20 process at least 300 vehicles in a single hour.

21 Some backups (to enter YTC) on Firing Center Road were reported in June 2007. These were typically
 22 associated with “large military convoys or...several commercial trucks entering the Post
 23 [simultaneously]” (US Army 2010). These sporadic delays notwithstanding, Firing Center Road and the
 24 main gate at YTC operate within their intended capacities.

25 Traffic volumes at other access points (described above) are minimal.

26

⁸ Whereas the 2005-6 traffic counts conducted for USACE 2007 were intended to capture long-term traffic volume trends, the short-duration counts conducted for Department of the Army 2010 capture only the summer peak season for operations at YTC.

1 **Table 3-7. Summary of YTC Incoming Vehicle Counts, Firing Center Road, 2005-6**

Month	Average Daily Traffic	Highest Single-Shift ¹
October 2005	539	823
November 2005	473	708
December 2005	405	538
January 2006	372	685
February 2006	453	568
March 2006	581	785
April 2006	513	732
May 2006	542	604
June 2006	546	629
July 2006	627	785
August 2006	509	582
September 2006	457	533
October 2006	551	565

Source: USACE 2007

Notes:

¹: Vehicle entries were categorized as being part of either the Day shift (0600h to 1800h) or the Mid shift (1800h to 0600h).

2 **3.5 AIR QUALITY**

3 Seven pollutants that are commonly found in air include: particulate matter 10 microns in diameter
4 (PM₁₀); particulate matter 2.5 microns in diameter (PM_{2.5}); ground-level ozone (O₃); carbon monoxide
5 (CO); sulfur dioxide (SO₂); nitrogen dioxide (NO₂); and lead (Pb). The USEPA calls these pollutants
6 "criteria" air pollutants and regulates them by developing human health-based and/or environmentally-
7 based criteria (science-based guidelines) for setting permissible levels. These guidelines are collectively
8 called the National Ambient Air Quality Standards (NAAQS). The NAAQS set a primary and, in some
9 cases, a secondary standard for each of the criteria pollutants. The primary standards are limits set based
10 on human health. The secondary standards are intended to prevent environmental and property damage.
11 Particulates (PM₁₀ and PM_{2.5}) and ground-level O₃ are the most widespread human health threats.

12 Particulate pollution consists of very fine dust, soot, smoke, and droplets that are formed from chemical
13 reactions. It is also produced when fuels such as coal, wood, or oil are burned. For example, SO₂ and
14 nitrogen oxide gases from motor vehicles, electric power generation, and industrial facilities react with
15 sunlight and water vapor to form particles. Particles may also come from fireplaces, wood stoves,
16 unpaved roads, and crushing and grinding operations, and may be blown into the air by the wind.

17 Ground-level O₃ is a primary component of smog, and can cause human health problems and damage
18 forests and agricultural crops. The two types of chemicals most associated with the formation of ground-
19 level O₃ are volatile organic compounds (VOCs) and nitrogen oxides (NO_x), including NO₂. VOCs are
20 released by cars burning gasoline, petroleum refineries, chemical manufacturing plants, and other
21 industrial facilities. The solvents used in paints and other consumer and business products contain volatile
22 organic compounds. NO_x are produced when mobile sources (cars, trucks, bulldozers, etc) and stationary
23 sources (power plants, industrial boilers, generators, etc) burn fuels such as gasoline, coal, or oil. The

1 reddish-brown color sometimes seen under smoggy conditions comes from nitrogen oxides in the lower
2 atmosphere.

3 A geographic area with air quality that is cleaner than the primary standard is called an "attainment" area;
4 areas that do not meet the primary standard are called "nonattainment" areas; and areas with a history of
5 nonattainment, but that currently meet NAAQS are called "maintenance" areas. Each state is responsible
6 for compliance with the NAAQS and has the authority to adopt its own Ambient Air Quality Standards
7 (AAQS) equal to or stricter than those established under the federal program. The Yakima Regional Clean
8 Air Agency (YRCAA) is responsible for air quality oversight in Yakima County and WDOE is
9 responsible for Kittitas County. The USEPA and the WDOE oversee YRCAA. NAAQS (primary and
10 secondary standards) and Washington State AAQS are listed in Table 3-8.

11 YTC is located in the South Central Washington Interstate Air Quality Control Region, which consists of
12 Benton, Franklin, Kittitas, Klickitat, Walla Walla, and Yakima Counties (40 CFR part 81.189). The six
13 counties are in an attainment area for all criteria pollutants (USEPA 2010), with two exceptions. The City
14 of Yakima, located approximately 4.5 miles southwest of the YTC Cantonment Area,⁹ is a maintenance
15 area for CO. A PM₁₀ maintenance area covers the entire City of Yakima and some surrounding areas,
16 including a very small strip (less than 100 acres) of YTC's western Cantonment Area (see Figure 3-3)
17 (US Army 2010). The proposed MCRC Site, however, is not located within either maintenance area.

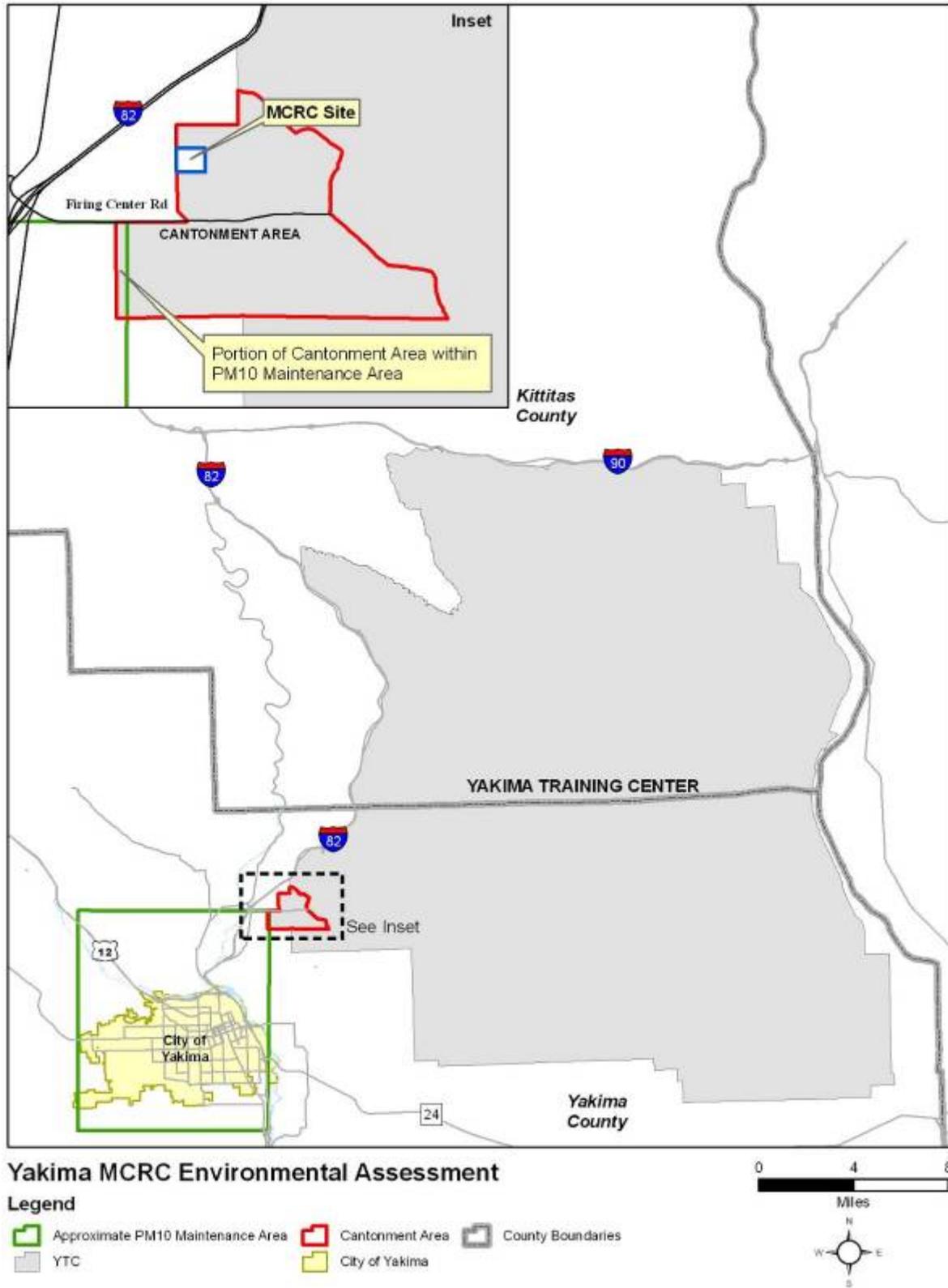
18 Most of the particulates at YTC are generated by rangeland fires and the fugitive dust associated with
19 maneuver-training activities. These particles tend to dissipate quickly as a result of the southwesterly
20 prevailing winds. Fire suppression programs are in place to control rangeland fires as quickly as possible
21 (US Army 2010).

22 Emissions inventories for YTC from 1995 and 2000 showed that YTC did not generate sufficient air
23 contaminants to require a Title V permit under the Clean Air Act of 1990 (CAA) (42 USC 85, 2008).¹⁰
24 The largest stationary source of air pollution at YTC is fuel burning equipment, which includes generators
25 and five boilers. Three additional boilers were decommissioned in 2009 and replaced with smaller, more
26 efficient natural gas space heater/furnaces, resulting in lower emissions (the other boilers remain in use).
27 Other sources of air pollution include painting operations, the WWTP, fuel storage, degreasing
28 operations, and vehicle maintenance (US Army 2010).

29 The USEPA has designated certain national parks and wilderness areas as Prevention of Significant
30 Deterioration (PSD) Class I areas because of their pristine air quality. These areas are given special
31 protection from impacts associated with air pollution. The closest PSD Class I area to the YTC is the Goat
32 Rocks Wilderness Area, which is located approximately 60 miles (96 km) to the southwest and upwind of
33 YTC (US Army 2010).

⁹ The 4.5-mile distance represents the distance from the closest edge of the City of Yakima to the Cantonment Area. Driving distance between the MCRC facility in the City of Yakima and the Cantonment Area is approximately 12 miles.

¹⁰ Title V of CAA defines thresholds for a wide variety of air emissions, and sets the provisions for issuing, renewing, amending, or revising point source emissions permits. The Title V program is promulgated by the Federal government under 40 CFR 70 (2004), but is adopted and implemented by the state.



1
2

Figure 3-3. PM₁₀ Maintenance Area Near YTC

1
2
3

Source: WDOE. 2010a. Air Quality Maps of Maintenance Areas.
http://www.ecy.wa.gov/programs/air/other/namaps/web_map_intro.htm

Table 3-8. NAAQS and Washington AAQS

Pollutant	Averaging Period	NAAQS ¹		Washington State AAQS ⁽²⁾
		Primary	Secondary	
Ozone (O ₃)	8-hour ⁽³⁾	0.075 ppm	Same as Primary NAAQS	None
	1-hour ⁽⁴⁾⁽⁵⁾	None	None	0.12 ppm
Carbon Monoxide (CO)	8-hour ⁽⁵⁾	9.0 ppm	None	Same as Primary NAAQS
	1-hour ⁽⁵⁾	35 ppm	None	Same as Primary NAAQS
Nitrogen Dioxide (NO ₂)	Annual Arithmetic Mean ⁽⁶⁾	0.053 ppm	Same as Primary NAAQS	0.05 ppm
	1-hour ⁽⁷⁾	0.1 ppm	Same as Primary NAAQS	None
Sulfur Dioxide (SO ₂)	Annual Arithmetic Mean ⁽⁶⁾	0.03 ppm	None	0.02 ppm
	24-hour ⁽⁵⁾	0.14 ppm	None	0.1 ppm
	3-hour ⁽⁵⁾	None	0.5 ppm	None
	1-hour ⁽⁸⁾	None	None	0.4 ppm; 0.25 ppm
Particulate Matter (PM ₁₀)	Annual Arithmetic Mean ⁽⁶⁾	None	None	50 µg/m ³
	24-hour ⁽⁹⁾	150 µg/m ³	Same as Primary NAAQS	Same as Primary NAAQS
Particulate Matter (PM _{2.5})	Annual Arithmetic Mean ⁽¹⁰⁾	15 µg/m ³	Same as Primary NAAQS	None
	24-hour ⁽¹¹⁾	35 µg/m ³	None	None
Lead (Pb)	Rolling 3-Month Average ⁽⁶⁾⁽¹²⁾	0.15 µg/m ³	Same as Primary NAAQS	None
	Quarterly Average ⁽⁶⁾	1.5 µg/m ³	Same as Primary NAAQS	None

ppm = parts per million by volume, µg/m³ = micrograms per cubic meter.

⁽¹⁾ Source: USEPA 2010b

⁽²⁾ Source: WDOE 2010b

⁽³⁾ To attain this standard, the 3-year average of the annual fourth highest daily 8-hour maximum must not exceed 0.075 ppm (effective May 27, 2008)

⁽⁴⁾ On June 15, 2005, US EPA revoked the 1-hour ozone standard (0.12 ppm) in all areas, although a few areas have continuing obligations under that standard ("anti-backsliding").

⁽⁵⁾ Not to be exceeded more than once per year

⁽⁶⁾ Not to be exceeded

⁽⁷⁾ On January 22, 2010, US EPA established a new 1-hour NO₂ standard at the level of 0.1 ppm (100 ppb), based on the 3-year average of the 98th percentile of the yearly distribution of 1 hour daily maximum concentrations, to supplement the existing annual standard

⁽⁸⁾ To attain this standard in Washington State, the 1-hour standard must not (1) exceed 0.4 ppm by volume average more than once a year; and (2) exceed 0.25 ppm by volume average more than twice in a conservative seven-day period

⁽⁹⁾ Not to be exceeded more than once per year on average over 3 years

⁽¹⁰⁾ To attain this standard, the 3-year average of the weighted annual mean PM_{2.5} concentrations from single or multiple community-oriented monitors must not exceed 15 µg/m³.

⁽¹¹⁾ To attain this standard, the 3-year average of the 98th percentile of 24-hour concentrations at each population oriented monitor within an area must not exceed 35 µg/m³ (effective December 17, 2006).

⁽¹²⁾ The NAAQS and criterion for lead was revised in October 2008 (effective January 2009). The standard was revised from 1.5 µg/m³ quarterly average to 0.15 µg/m³ rolling 3-month average.

4 **3.6 NOISE**

5 Noise is one of the most common environmental issues associated with construction activities and
6 military operations such as weapons firing, demolitions, and aircraft operations. Typically, levels of noise
7 are measured in units called decibels. A number of factors affect how the human ear perceives sound: the
8 actual level of noise, frequency, period of exposure, and fluctuations in noise levels during exposure.
9 Since the human ear cannot perceive all pitches or frequencies equally well, most noise analyses use
10 measures that are adjusted or weighted to compensate for the human lack of sensitivity to low-pitched and
11 high-pitched sounds. The two most common weighted measures are known as the A-weighted decibel
12 (dBA) and the C-weighted decibel (dBC).

1 Noise resulting from traffic, small boats, and aircraft is evaluated using dBA. Table 3-9 summarizes noise
 2 levels associated with some common indoor and outdoor activities and settings. For reference, a noise
 3 level of 40 dBA is consistent with low-level urban ambient sound (FICON 1992).

4 **Table 3-9. Sound Levels of Typical Noise Sources and Noise Environments**

Noise Source (at a given distance)	A-Weighted Sound Level Scale (dBA)
Military Jet Takeoff with Afterburner (50 ft)	140
Civil Defense Siren (100 ft)	130
Commercial Jet Takeoff (200 ft)	120
Pile Driver (50 ft)	110
Ambulance Siren (100 ft)	100
Motorcycle (25 ft)	90
Garbage Disposal (3 ft)	80
Passenger Car, 65 mph (25 ft)	70
Living Room Stereo (15 ft)	
Vacuum Cleaner (3 ft)	
Normal Conversation (5 ft)	60
Air Conditioning Unit (100 ft)	
Light Traffic (100 ft)	50
Bird Calls (distant)	40
Soft Whisper (5 ft)	30

Source: FICON 1992

5 The dBC scale measures more of the low-frequency components of noise than the A-weighted scale. It is
 6 used for evaluating impulsive noise generated from blasting activities, sonic booms, or other low-
 7 frequency sounds capable of inducing vibrations in buildings or other structures.

8 In addition to dBA and dBC, peak unweighted decibel values—values not tied to dBA or dBC scales—
 9 are also used to characterize small arms firing and large weapons training (US Army 2010). The PK 15
 10 (met) is the peak sound level likely to be exceeded 15 percent of the time.

11 Table 3-10 summarizes the land use planning guidelines, zone definitions, and noise limits developed by
 12 the US Army and also used by MFR to describe land use compatibility with relation to noise. The day-
 13 night level (DNL) is the primary descriptor for military noise, except small arms. DNL is the time-
 14 weighted average sound level, and includes a 10-decibel (dB) penalty added to the nighttime levels (2200
 15 to 0700 hours) to reflect the greater disturbance potential from nighttime noises.

16 Existing sources of noise at YTC include military aviation activities, small arms artillery, large caliber
 17 weapons training, and vehicular traffic. Noise from vehicular traffic is primarily associated with the
 18 Cantonment Area. For residential land uses, noise levels above 60 ADNL or 57 CDNL may be considered
 19 an impact on the community environment (US Army 2010). Private residential land in the vicinity of the
 20 MCRC Site is sparsely developed, with only six nearby residences (Figure 1-3).

1

Table 3-10. Land Use Planning Guidelines

Noise Zone	Typical Acceptable Use ²	Noise Limits (dB)		
		Aviation (ADNL) ³	Impulsive (CDNL) ⁴	Small Arms PK15 (met) ⁵
LUPZ ¹	Noise-sensitive land uses such as housing, schools, and medical facilities.	60-65	57-62	N/A
I	All types of land use activities, including noise-sensitive land uses.	<65	<62	<87
II	Industrial, manufacturing, transportation, and resource production. Not normally recommended for noise sensitive land uses	65-75	62-70	87-104
III	Land uses not affected by noise.	>75	>70	>104

Notes:

¹: LUPZ = Land Use Planning Zone²: Source: Army Regulation 200-1, December 2007.³: ADNL = A-weighted DNL;⁴: CDNL = C-weighted DNL;⁵: PK 15 (met) = single-event peak level exceeded by 15 percent of events (unweighted).

2 The most recent noise study completed for YTC is a July 2009 study prepared by the US Army Center for
3 Health Promotion and Preventive Medicine (USACHPPM) that evaluates noise associated with
4 demolition and large caliber weapons, Vagabond Army Heliport (part of YTC, approximately one mile
5 south of the MCRC Site), and small caliber weapons. The study did not analyze existing road
6 transportation noise within the Cantonment Area where the Proposed Action would occur.¹¹ The MCRC
7 Site and surrounding private land are within the Land Use Planning Zone (LUPZ—see Table 3-10)
8 (USACHPPM 2009, as cited in US Army 2010).

9 3.7 CULTURAL RESOURCES

10 Cultural resources can encompass archaeological and historic resources, including, but not limited to,
11 buildings, structures, objects, districts, and sites. These resources can represent a variety of periods
12 ranging from the prehistoric to the present day. Within the State of Washington, information on
13 archaeological and historic resources is maintained by the Department of Archaeology and Historic
14 Preservation (DAHP), which serves as the SHPO. The SHPO is responsible for reviewing actions that
15 may impact cultural resources.

16 DAHP primarily reviews federal, state, and local government projects under federal and state legislation
17 designed to protect these resources. Among the federal legislation is Section 106 of the National Historic
18 Preservation Act (NHPA) of 1966, as amended (16 USC 470, 2006). The NHPA requires federal agencies
19 to consider cultural resources as part of all licensing, permitting, and funding decisions. DAHP is
20 responsible for ensuring that cultural resources in Washington State are identified and for providing a
21 formal opinion on each site's significance and the impact of the agency's action upon a site.

22 An historic property is

¹¹ Baseline road transportation noise levels at the Cantonment Area are expected to be small in comparison to the other activities included in the July 2009 study.

1 any Pre-European-contact or historic district, site, building, structure, or object included in, or
2 eligible for listing on the National Register, including artifacts, records, and material remains
3 related to such a property or resource (36 CFR 800, Title III, Section 301, #5, 2004).

4 The National Register of Historic Places (NRHP) is the official inventory of cultural resources that are
5 significant in American history, prehistory, architecture, archaeology, engineering, and culture. The term
6 “historic property” is used in the sense defined here throughout this EA.

7 The YTC *Integrated Cultural Resources Management Plan (ICRMP)2008-12* (YTC 2009) documents
8 cultural resources at YTC, as well as the installation’s policies and procedures for implementing its
9 cultural resources management program through 2012.

10 **3.7.1 Archaeological Resources**

11 Approximately 280,000 acres at YTC have been surveyed for archaeological resources, including the
12 entire Cantonment Area (US Army 2010). YTC contains a total of 1,353 archaeological sites and two
13 archaeological districts: the Wa Pai Xie Archaeological District, which contains 11 sites, and the
14 Tributary Headwaters Archaeological District, which contains nearly 100 sites. Both archaeological
15 districts are eligible for listing on the NRHP (YTC 2009, US Army 2010). None of these sites or districts
16 is listed on the NRHP, and none occurs within or includes the Cantonment Area, including the proposed
17 MCRC Site (YTC 2009, US Army 2010).

18 YTC is within the area ceded by bands and tribes of the Yakama Nation pursuant to the Treaty of 1855.
19 Yakama tribal members continue to hunt and gather plant resources at YTC. The Wanapum People live
20 adjacent to YTC’s eastern boundary near Priest Rapids Dam and use YTC for traditional, religious, and
21 ceremonial purposes (YTC 2009, US Army 2010). With respect to traditional cultural properties, “an
22 ongoing program of consultation with these tribes is in place to ensure accessibility and confidentiality
23 within the parameters of the YTC mission” (US Army 2010).

24 **3.7.2 Historic and Architectural Resources**

25 There are no buildings eligible for listing on the NRHP at YTC (YTC 2009). The Cantonment Area
26 contains

27 Cold War-era buildings and structures dating from the 1950s, including single-story barracks,
28 administrative and maintenance facilities, recreational facilities, ammunition storage structures, a
29 water tank, and an airstrip. All of these historic resources were intended as temporary
30 buildings/structures, and are managed under a Section 106 programmatic agreement between the
31 Army, the Advisory Council on Historic Preservation, and the Washington SHPO concerning the
32 identification and treatment of 1) Cold War Era (1946–1974) Unaccompanied Personnel Housing
33 and 2) World War II and Cold War Era (1939–1974) Ammunition Storage Facilities. This
34 agreement acknowledges that these types of historic military structures are not eligible for listing
35 in the NRHP and provides a programmatic approach to their management (US Army 2010).

36 **3.8 NATURAL RESOURCES**

37 Natural resources as described in this EA include geology, topography, soils, water resources, wetlands,
38 floodplains, vegetation, wildlife, and special status species.

3.8.1 Geology, Topography, and Soils

YTC is in the Columbia Plateau physiographic province. The topography at YTC is dominated by a series of ridges running roughly northwest-to-southeast. Elevations at YTC range from approximately 500 feet above mean sea level (MSL) at Priest Rapids Dam on the Columbia River to 4,216 feet above MSL at the top of Cairn Hope Peak. YTC is underlain by extensive flood basalts covered by loess (windblown silt). The prevailing southwesterly winds deposit most loess on north-facing slopes where unconsolidated material can reach depths of 10 feet (US Army 2010); downwind, south-facing slopes receive significantly less material. The proposed MCRC Site slopes gradually to the west (see Figure 3-3). Elevations range from approximately 1,310 feet above MSL along the western boundary of the Project Area to approximately 1,345 feet above MSL in the southeastern corner of the site.

Geologic hazards at the YTC Cantonment Area are considered to be slight (USACE 2007). 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; however, these conditions do not occur at the proposed MCRC Site. Volcanic hazards are limited to ashfall from Cascade volcanoes, which could temporarily affect operations at YTC. The active volcanoes in closest proximity include Mount Rainier, approximately 65 miles west of YTC; Mount Adams, approximately 65 miles southwest; Mount St. Helens, approximately 90 miles southwest; and Glacier Peak, approximately 100 miles north-northwest.

Soil surveys at YTC have identified more than 200 soil units. Most soils at YTC are characteristic of arid climates and mesic temperature regimes (US Army 2010). The major soil associations at YTC fall into four groups, depending on the surface material from which they have formed and local topography:

- Soils that have formed in glacial outwash, loess, alluvium, and lacustrine sediments; on terraces, terrace escarpments, and benches in areas of channeled scabland;
- Soils that formed in loess, slope alluvium, and alluvium; on alluvial fans and terraces;
- Soils that formed in residuum and colluvium derived from basalt and in loess; on hillslopes, ridgetops, and benches; and
- Soils that formed in loess, slope alluvium, and residuum and colluvium derived from basalt on plateaus, benches, ridgetops, and hillsides (US Army 2010).

The proposed MCRC Site consists entirely of Willis Silt Loam, on slopes ranging from 2-5 percent (NRCS 2009). Willis silt loam is a moderately deep, well-drained upland soil formed from loess deposits (US Army 2010). This soil type is often poorly suited for structures with basements due to the presence of a cemented pan near the surface and shallow bedrock, but has far less significant limitations for supporting structures without basements (NRCS 2009).

3.8.2 Water Resources

Water resources for this EA include surface water, wetlands, and floodplains. Groundwater is discussed in Section 3.3. The Clean Water Act of 1977 (CWA), as amended (33 USC 1251, 2002) and the Safe

1 Drinking Water Act of 1972, as amended (PL 93-523, 2002) are the primary federal laws protecting the
2 nation's waters including lakes, rivers, aquifers, and wetlands.

3 **3.8.2.1 Surface Water**

4 There are no perennial surface water resources on or near the proposed MCRC Site. The MCRC Site is
5 drained by two unnamed lateral irrigation ditches (Figure 3-4). These are human-made ditches with
6 limited natural habitat components, and neither contain suitable fish habitat (ERM 2010).

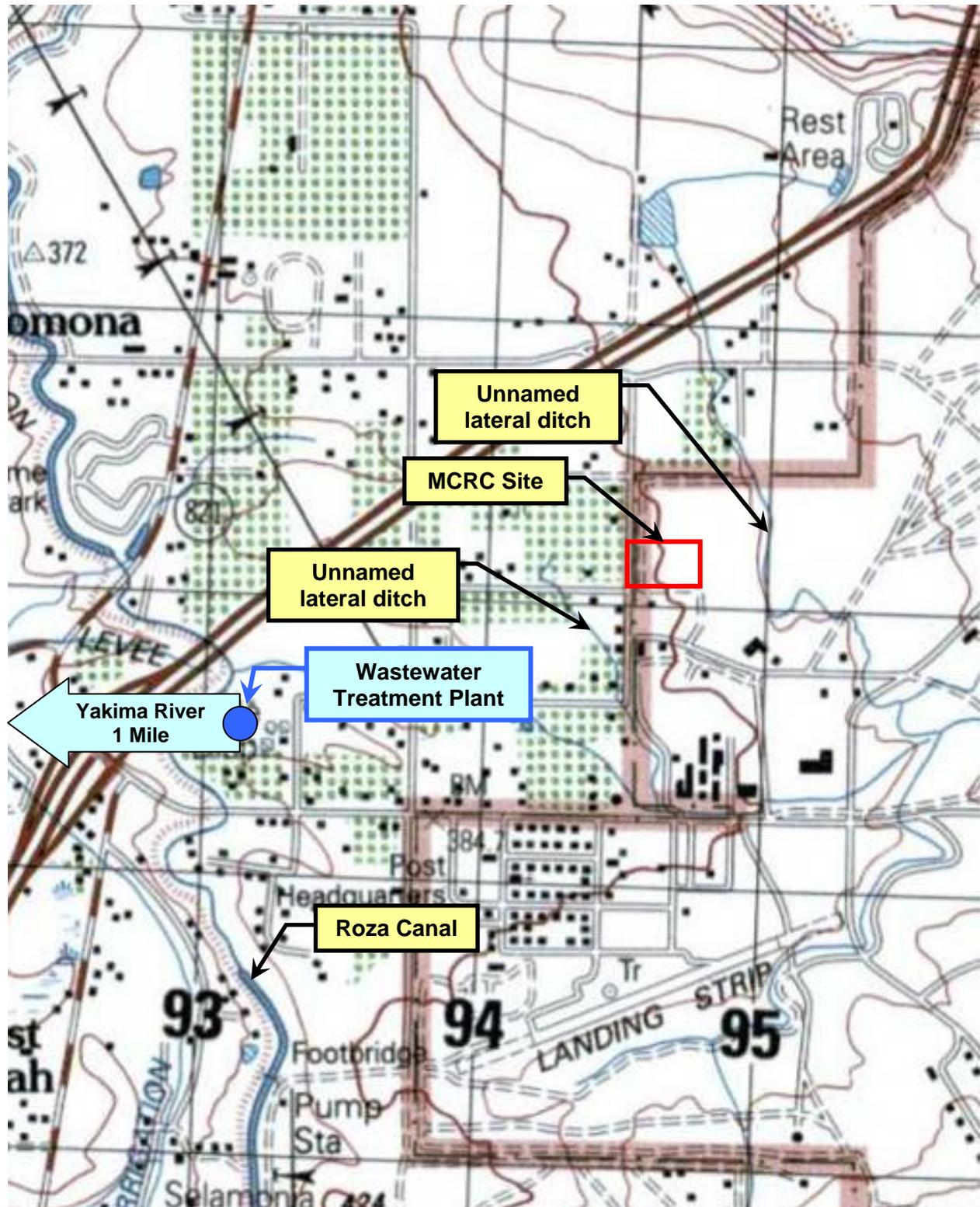
7 **3.8.2.2 Wetlands and Floodplains**

8 A review of the National Wetland Inventory maps and digital mapping for the affected area as well as a
9 site visit indicated that there are no wetlands within, or in proximity of the proposed MCRC Site (USFWS
10 2010). The Federal Emergency Management Agency maintains and updates the National Flood Insurance
11 Program (NFIP) maps. These maps demarcate the boundaries of 100-year floodplains and flood hazard
12 zones. The NFIP maps do not indicate the presence of any floodplains or flood hazard zones in the
13 vicinity of the proposed MCRC Site (FEMA 2010).

14 **3.8.3 Vegetation**

15 YTC is dominated by shrub-steppe vegetation that is comprised of shrublands, grasslands, and dwarf
16 shrubland vegetation communities (Figure 3-5). Shrublands are typically dominated by big sagebrush,
17 with bunchgrasses and annual and perennial forbs in the understory. Grasslands resemble shrublands
18 except that the shrub component is greatly reduced or absent, has been eliminated by some type of
19 disturbance (e.g., fire, military training, homesteading, or farming), or is represented by rabbitbrush,
20 which may sprout vigorously after a fire. Dwarf shrublands, typically found in areas with shallow, stony
21 soils, are dominated by Sandberg's bluegrass and a layer of dwarf shrub species including buckwheat and
22 stiff sagebrush (US Army 2010).

23 A field survey of the proposed MCRC Site and adjoining parcels to the north and east was conducted in
24 June 2010 (Appendix C). Vegetation at the MCRC Site consists of a Sandberg's bluegrass-cheatgrass
25 community. Patches of bluebunch and needle and thread grass are scattered throughout the site, and the
26 northwest corner of the site contains a large patch of prickly pear cactus. Forbs are uncommon and
27 vegetative diversity is generally low at the site (Mee 2010). The survey documented a patchy distribution
28 of Russian knapweed on the site. Russian knapweed is considered a Class B noxious weed by the State of
29 Washington (NWCB 2010) and state law holds property owners responsible for controlling the spread of
30 noxious weeds on their property (Revised Code of Washington 17.10.140, 1997).



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Figure 3-4. Topography and Surface Water Features near the proposed MCRC Site

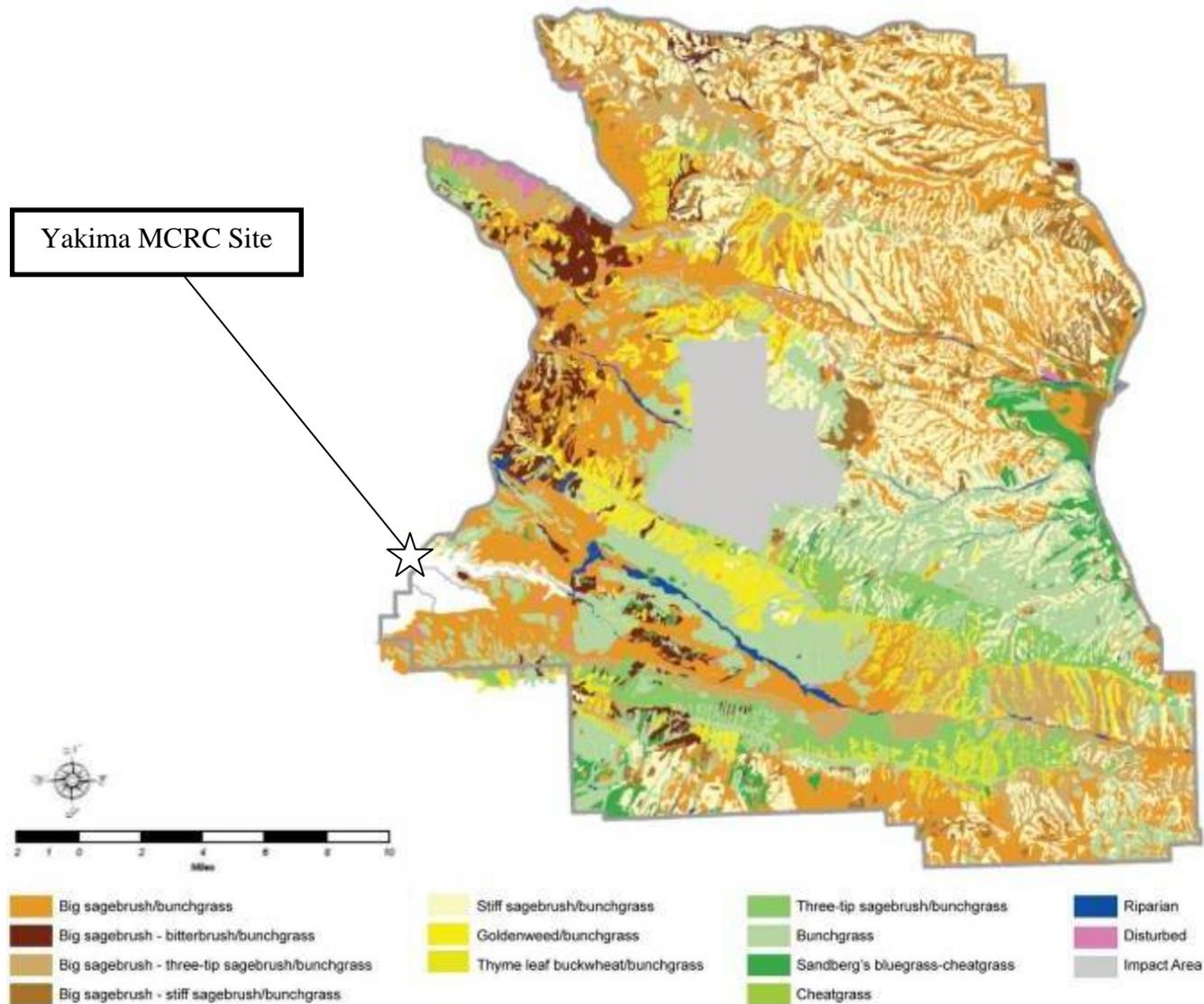


Figure 3-5. Vegetation Communities at the Yakima Training Center

Source: Department of the Army. 2010. Final Environmental Impact Statement for Fort Lewis Army Growth and Force Structure Realignment, Fort Lewis and Yakima Training Center, Washington. Figure 5-6.

3.8.4 Wildlife

A total of 246 wildlife species occur or are likely to occur on YTC, including eight amphibians, 14 reptiles, 174 birds, and 50 mammals (US Army 2010). Amphibians are restricted to wetlands and riparian areas where their requirements for water can be met, therefore amphibians are rare near the MCRC Site. Among the reptiles at YTC, short-horned lizards, gopher snakes, and western rattlesnakes are widely distributed throughout the landscape (US Army 2010) and would therefore be expected to occur at or near the MCRC Site. Many of the other species of reptiles are specially adapted to sagebrush and cliff and talus slope habitats (US Army 2010), and would therefore be expected to occur rarely at or near the MCRC Site.

The most common avian species found on YTC are the western meadowlark, Brewer’s sparrow, vesper sparrow, horned lark, and sage thrasher (US Army 2010). Five small mammals account for 98 percent of all mammal species identified at YTC during previous surveys: deer mouse, sagebrush vole, Great Basin pocket mouse, least chipmunk, and northern pocket gopher (US Army 2010). These avian and mammal species would be expected to be found at or near the MCRC Site.

3.8.5 Special Status Species

Special status species are those species that are afforded special protection through federal and/or state regulations. Species listed by the federal and/or state government as endangered, threatened, a species of concern, and/or a candidate for threatened or endangered status are considered special status species. Twenty-one special status plant species and 32 special status wildlife species are known to occur or potentially occur at YTC (Table 3-11). Most are state-listed sensitive, threatened, or endangered species. No federally-listed threatened or endangered species are known to inhabit the MCRC Site. One federal threatened plant species, 15 federal species of concern and four federal candidate species for federal listing have either been documented or are believed to occur at YTC based on habitat conditions (US Army 2010).

The June 2010 field survey of the MCRC Site observed one Townsend’s ground squirrel, a federal species of concern, and three burrow complexes (Leingang 2011) that could potentially be used by either Townsend’s ground squirrels or burrowing owls (federal species of concern and candidate species for state listing). It was not clear whether these burrows were being actively used by either species (Mee 2010). No other special status species or their habitats were observed during the field survey

Table 3-11. Federal and State-listed Species Known to Occur or Potentially Occurring at YTC

Type	Common Name	Latin Name	Listing	
			Federal ¹	State ¹
Plants	Beaked cryptantha	<i>Cryptantha rostellata</i>	--	T
	Beaked spike-rush	<i>Eleocharis rostellata</i>	--	S
	Bristle-flowered collomia	<i>Collomia macrocalyx</i>	--	S
	Cespitose evening-primrose	<i>Oenothera caespitosa ssp. caespitosa</i>	--	S
	Columbia milk-vetch	<i>Astragalus columbianus</i>	SC	S
	Coyote tobacco	<i>Nicotiana attenuate</i>	--	S
	Dwarf evening-primrose	<i>Camissonia pygmaea</i>	--	S
	Gray cryptantha	<i>Cryptantha leucophaea</i>	SC	S
Hoover’s desert-parsley	<i>Lomatium tuberosum</i>	SC	S	

Table 3-11. Federal and State-listed Species Known to Occur or Potentially Occurring at YTC

Type	Common Name	Latin Name	Listing	
			Federal ¹	State ¹
	Hoover's tauschia	<i>Tauschia hooveri</i>	SC	T
	Kalm's lobelia	<i>Lobelia kalmii</i>	--	E
	Miner's candle	<i>Cryptantha scoparia</i>	--	S
	Narrow-stem cryptantha	<i>Cryptantha gracilis</i>	--	S
	Nuttall's sandwort	<i>Minuartia nuttallii ssp. fragilis</i>	--	T
	Northern wormwood ²	<i>Artemisia borealis var. wormskioldii</i>	C	E
	Paiute suncup	<i>Camissonia scapoidea ssp. scapoidea</i>	--	S
	Pauper milk-vetch	<i>Astragalus misellus var. pauper</i>	--	S
	Suksdorf's monkey-flower	<i>Mimulus suksdorfii</i>	--	S
	Umtanum desert buckwheat ²	<i>Erigonum codium</i>	C	E
	Ute ladies'-tresses ²	<i>Spiranthes diluvalis</i>	T	E
White eatonella	<i>Eatonella nivea</i>	--	T	
Amphibians	Columbia spotted frog	<i>Rana pretiosa</i>	--	E
	Northern leopard frog	<i>Rana pipiens</i>	SC	C
Reptiles	Sagebrush lizard	<i>Sceloporus graciosus</i>	SC	C
	Sharp-tailed snake	<i>Contia tenuis</i>	SC	C
	Striped whipsnake	<i>Masticophis taeniatus taeniatus</i>	--	C
Birds	American white pelican	<i>Pelecanus erythrorhynchos</i>	--	E
	Bald eagle	<i>Haliaeetus leucocephalus</i>	SC	S
	Burrowing owl	<i>Athene cucularia</i>	SC	C
	Common loon	<i>Gavia immer</i>	--	S
	Ferruginous hawk	<i>Buteo regalis</i>	SC	T
	Golden eagle	<i>Aquila chrysaetos</i>	--	C
	Greater sage-grouse	<i>Centrocercus urophasianus phaios</i>	C	T
	Lewis's woodpecker	<i>Melanerpes lewis</i>	--	C
	Loggerhead shrike	<i>Lanius ludovicianus</i>	SC	C
	Merlin	<i>Falco columbarius</i>	--	C
	Northern goshawk	<i>Accipiter gentilis</i>	SC	C
	Olive-sided flycatcher	<i>Contopus borealis</i>	SC	C
	Sage sparrow	<i>Amphispiza belli</i>	--	C
	Sage thrasher	<i>Oreoscoptes montanus</i>	--	C
	Sandhill crane	<i>Grus canadensis</i>	--	E
	Western grebe	<i>Aechmophorus occidentalis</i>	--	C
	Yellow-billed cuckoo	<i>Centrocercus urphasianus phaios</i>	C	C
Fish	Bull trout	<i>Salvelinus confluentus</i>	T	C
	Chinook salmon (Upper Columbia Spring Run)	<i>Oncorhynchus tshawytscha</i>	E	C
	Steelhead trout (Mid-Columbia)	<i>Oncorhynchus mykiss</i>	T	C
	Steelhead trout (Upper-Columbia)	<i>Oncorhynchus mykiss</i>	E	C
Mammals	Black-tailed jackrabbit	<i>Lepus californicus</i>	--	C
	Keen's myotis	<i>Myotis keenii</i>	--	C
	Merriam's shrew	<i>Sorex merriami</i>	--	C
	Townsend's big eared bat	<i>Corynorhinus townsendii</i>	SC	C
	Townsend's ground squirrel	<i>Spermophilus townsendii</i>	SC	C
	White-tailed jackrabbit	<i>Lepus townsendii</i>	--	C

Source: Department of the Army. 2010. Final Environmental Impact Statement for Fort Lewis Army Growth and Force Structure Realignment, Fort Lewis and Yakima Training Center, Washington. Table 5-5.

Notes:

¹: E = endangered; T = threatened; C = candidate; S = sensitive; and SC = species of concern

²: This species is not known to occur at YTC.

1 3.9 HAZARDOUS MATERIALS AND WASTE

- 2 Hazardous materials used and/or stored at YTC include fuels, paints, solvents, coolants, sanitation
- 3 chemicals, munitions, unexploded ordnance (UXO), pesticides, herbicides, and petroleum/oils/lubricants.
- 4 Activities such as facility and equipment maintenance, medical care activities, and soldier training

1 generate hazardous wastes such as biohazardous waste, low-level radioactive waste, asbestos, lead based
2 paint, and polychlorinated biphenyls (PCBs) (US Army 2010).

3 Hazardous wastes are managed through YTC's One Stop Yard. Contract services are used to transport
4 hazardous waste from YTC. Both nonhazardous and hazardous wastes are transported off site to one of
5 several permitted facilities for disposal. YTC policies and Spill Prevention, Control, and Countermeasure
6 (SPCC) Plans, manage hazardous materials and waste by minimizing the inventory of hazardous
7 materials, hazardous waste generated, and potential for release (US Army 2010).

8 Training exercises and testing activities at YTC expend a variety of ordnance, through a variety of direct
9 and indirect weapons, such as grenades, mortars, howitzers, artillery, rockets, and missiles, during
10 training exercises and testing activities. Grenades, mortars, and artillery weapons used in live-fire training
11 can produce UXO; all other ammunition is inert. Expended ammunition, although inert as an explosive,
12 may remain a source of lead contamination. Soils with lead contamination may be found at gun and
13 artillery practice ranges where lead munitions are used (US Army 2010).

14 Currently, eight sites in the Cantonment Area remain under a Land Use Control Plan. These sites were
15 previously used for activities related to training and maintenance. They include a pesticide handling area,
16 an ammunition storage site and burn pit, a fire training pit, two landfills, a vehicle repair shop, an
17 underground storage tank (UST) location, and a buried munitions site (US Army 2010). The only one of
18 these sites in proximity to the Proposed Action is a former landfill/burn pit, approximately 500 yards east
19 of the proposed MCRC Site (ERM 2010).

20 The MCRC Site has never been developed or formally used as a range, and contains no building,
21 transformers, light fixtures, stockpile areas, aboveground or underground storage tanks, or other potential
22 sources of contamination (ERM 2010).

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1 **4.0 ENVIRONMENTAL CONSEQUENCES**

2 This chapter discusses the potential environmental effects of the Proposed Action and the No Action
3 Alternative. The terms used in this section to describe the duration, scale, and intensity of impacts are
4 described below.

5 **Duration**

- 6 • **Short-term** effects would not persist beyond 5 years.
- 7 • **Long-term** effects would persist beyond 5 years or be permanent.

8 **Spatial Scale**

- 9 • **Local** effects would occur in the area immediately surrounding a project or activity and within
10 the boundaries of YTC.
- 11 • **Regional** effects have the potential to migrate off-post.

12 **Intensity**

- 13 • **Negligible** effects may locally alter a resource, but would not measurably change its function or
14 character.
- 15 • **Minor** effects include any change to a resource that would either be isolated and localized or not
16 measurable on a wider scale.
- 17 • **Moderate** effects would be measurable on a wide scale (e.g., across the entire installation or
18 region). If impacts are adverse, they would not exceed limits of applicable local, state, or federal
19 regulations.
- 20 • **Major** may exceed limits of applicable local, state, or federal regulations or would untenably
21 alter the function or character of the resource.

22 **Significance/Significant**

23 As described in Section 1.4, the threshold of significance in this EA is applied as per Section 1508.27 of
24 the CEQ regulations for implementing NEPA. This definition considers both the context and intensity of
25 the effect, and is synonymous with a "major" impact.

26 **4.1 LAND USE AND VISUAL RESOURCES**

27 **4.1.1 Proposed Action**

28 **4.1.1.1 Land Use**

29 The Proposed Action is located entirely within the Cantonment Area would be consistent with existing
30 facilities and recommended future military land uses (US Army 2009). Yakima County classifies all YTC
31 lands within its boundaries as Federal Lands. The Proposed Action is consistent with Yakima County

1 zoning and comprehensive plans, and is similar to other uses within the Cantonment Area; therefore, the
2 Proposed Action would not result in significant impacts on land use.

3 Under the Proposed Action, Company B would vacate the downtown Yakima training facility. Future use
4 of the vacated building is uncertain at this time, but no physical alteration or land use changes are
5 envisioned as part of the Proposed Action. Based on these findings, the Proposed Action would have no
6 significant impact on land use.

7 **4.1.1.2 Visual Resources**

8 Approximately six private residences are located across Tipp Road to the west, and within 500 feet, of the
9 western edge of the proposed MCRC Site (Figure 1-3). These residences currently have views of the
10 Umtanum and Yakima Ridges to the northeast and southeast, respectively. Exact placement of the MCRC
11 on the MCRC Site has not yet been determined. However, the Proposed Action could potentially diminish
12 views from the residences described above. In addition, lighting associated with the MCRC would be
13 consistent with other facilities at YTC, and would likely be noticeable to these residences. These effects
14 would be minor in intensity, and would be minor in intensity due to the proposed MCRC's one-story
15 building height and the fact that the proposed MCRC would only occupy approximately two acres of a
16 12.5 acre tract. Consistent with mission-essential requirements, facility design and siting will minimize
17 light pollution and disturbance of views for neighboring private property.

18 The effects described above are local and minor in nature; therefore, the Proposed Action would not result
19 in significant impacts on visual resources.

20 **4.1.2 No Action Alternative**

21 Under the No Action Alternative, MFR would continue to lease vehicle maintenance facilities from the
22 U.S. Army at YTC and share it with the ARNG, and would continue to use the downtown Yakima reserve
23 center. There would be no impacts to land use at YTC or the downtown Yakima reserve center under the
24 No Action Alternative.

25 **4.2 SOCIOECONOMICS**

26 **4.2.1 Proposed Action**

27 **4.2.1.1 Demographics**

28 The Proposed Action would not involve any increase in the number of active-duty or reserve personnel or
29 result in any indirect change in permanent employment within the Region of Influence (ROI—see Section
30 3.2). The Proposed Action would involve the permanent relocation of nine full-time active-duty personnel
31 from the downtown Yakima MCRC to the proposed MCRC at YTC. In addition, approximately 62
32 reservists would conduct training at YTC rather than the downtown Yakima reserve center. The
33 remaining approximately 62 personnel that comprise Company B already train at YTC. YTC supports
34 over 500 full time personnel and hosts an average of 2,200 personnel during periodic training (US Army
35 2010). Therefore, the Proposed Action would represent approximately a two percent increase in

1 permanent staff and a three percent increase in periodic training staff at YTC. Because these employment
2 relocations would be within the ROI, and because YTC is within commuting distance (approximately 12
3 miles by road) of the downtown MCRC, the Proposed Action would have no significant effect on
4 demographics at YTC and the surrounding community.

5 **4.2.1.2 Regional Economy**

6 Implementing the Proposed Action would provide economic benefits within the ROI. The new
7 construction would have a value of approximately \$13.9 million, and would be expected to take about one
8 year to complete (USMC 2009). Based on the economic assumptions used to evaluate construction of the
9 AFRC just south of the MCRC Site (USACE 2007), the Proposed Action would be expected to generate
10 the following total (including both direct and indirect¹²) economic impacts: \$20-24 million in sales, \$7.5
11 million in household earnings, and 100-200 employment positions within the ROI. All of these beneficial
12 effects would be temporary (ceasing once construction is complete), and would be small compared to
13 overall spending, income, and employment in the ROI (see Sections 3.2.2.1 and 3.2.2.2). Construction of
14 the Proposed Action would therefore have no significant impact on the regional economy.

15 The Proposed Action would not involve the creation or elimination of any new permanent employment
16 positions, simply the transfer of some active-duty and reservists from downtown Yakima to the proposed
17 MCRC Site at YTC. Therefore, operation of the Proposed Action would have no adverse effect on the
18 regional economy.

19 **4.2.1.3 Environmental Justice and Protection of Children**

20 The proposed MCRC Site would not be located in an area that is characterized as a predominately
21 minority or low income area. The minority population percentage and poverty rates of the ROI are not
22 significantly different from those of Yakima County. Further, as discussed throughout this chapter, the
23 Proposed Action would not result in any significant environmental impacts. Therefore, the Proposed
24 Action would not disproportionately adversely affect minority or low income populations and would
25 comply with Executive Order 12898 on Environmental Justice.

26 There are no children regularly present at YTC (nor would there be under the Proposed Action) and only
27 a few residences in the vicinity of the MCRC Site, therefore, the Proposed Action would not result in
28 undue environmental health and safety risks to children and would comply with Executive Order 13045
29 on Protection of Children from Environmental Health Risks and Safety Risks.

30 **4.2.2 No Action Alternative**

31 The No Action Alternative would have no effect on socioeconomics, including minority populations, low-
32 income populations, or children.

¹² Direct impacts include those generated by construction activities themselves. Indirect impacts include spin-off effects of direct spending and employment.

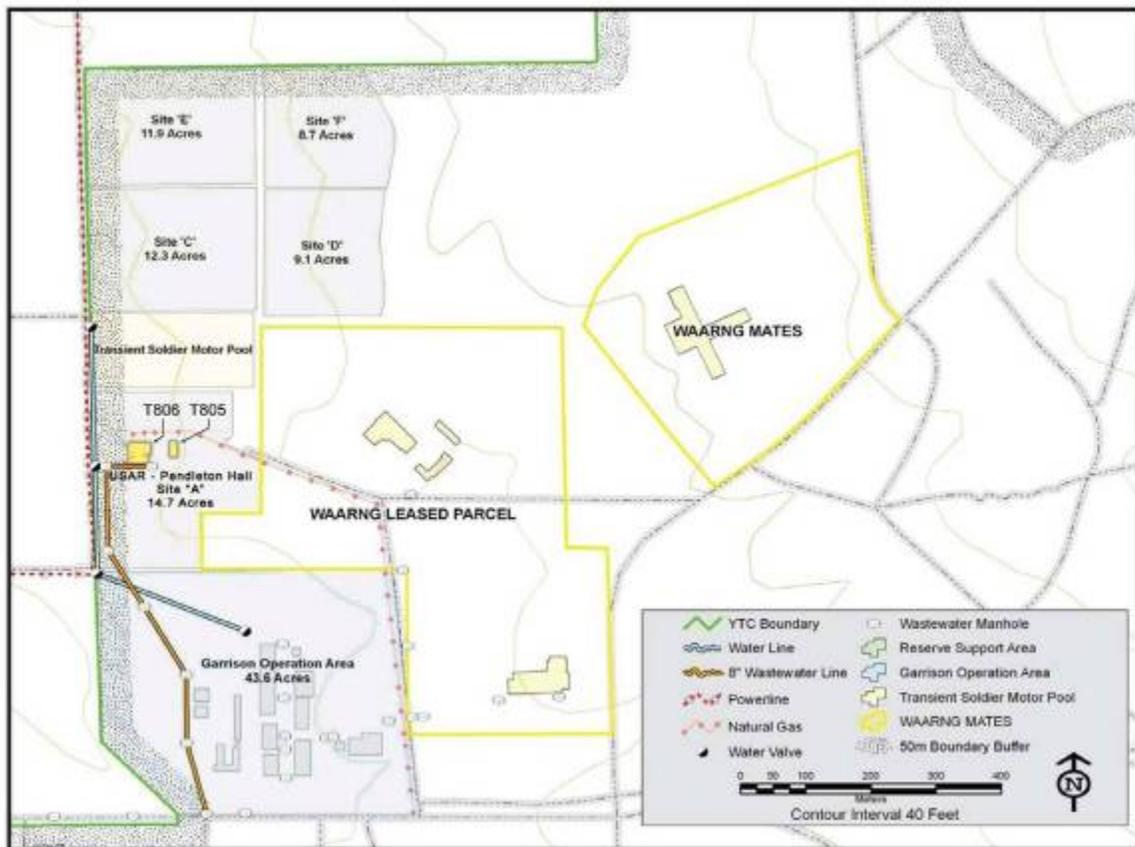
1 **4.3 INFRASTRUCTURE, UTILITIES, AND MEDICAL SERVICES**

2 **4.3.1 Proposed Action**

3 Under the Proposed Action, nine full time active-duty personnel would be relocated to the proposed
4 MCRC Site at YTC. In addition, approximately 62 reservists would also be relocated to the MCRC Site
5 during their training activities. Accordingly, implementation of the Proposed Action would result in a
6 minimal increase in water demand, wastewater and stormwater generation, electrical use, and solid waste
7 generation, as discussed below.

8 **4.3.1.1 Potable Water Supply**

9 Existing potable water lines serve the AFRC, located approximately 600 feet south of the MCRC Site,
10 and extend nearly to the MCRC Site itself (see Figure 4-1). Extension of these water lines to the MCRC
11 Site would likely be achieved without impacting traffic patterns or other buildings or facilities at YTC.



13 **Figure 4-1. Existing Utilities in the Vicinity of the MCRC Site**

14 *Source: Yakima Training Center Department of Public Works, as reprinted in USACE. 2007. Yakima Training Center,*
15 *Washington. Base Realignment and Closure (BRAC) Actions. Final Environmental Assessment.*

16 The Proposed Action would result in a minimal increase in demand for potable water at YTC due to the
17 relocation of approximately 71 personnel (nine active-duty and 62 part time reservists) from the
18 downtown Yakima reserve center to the MCRC Site at YTC. During Company B’s periodic training

1 activities, the increase in water demand is estimated at approximately 1,725 gpd (assuming 25 gpd per net
2 employee). This represents less than a one percent increase in water demand (versus current peak demand
3 of approximately 200,000 gpd¹³). The increase in weekday demand (due to nine new active-duty
4 employees) would be only 225 gpd. As a result, the Proposed Action would have no significant impact on
5 YTC's potable water supply.

6 **4.3.1.2 Wastewater**

7 Wastewater from the proposed MCRC would be conveyed to YTC's WWTP via sanitary sewer lines for
8 treatment and ultimate discharge to the Yakima River. Existing wastewater lines serve the AFRC, located
9 approximately 600 feet south of the proposed MCRC Site (see Figure 4-1). Extension of these wastewater
10 lines to the MCRC Site would likely be achieved without impacting traffic patterns or other buildings or
11 facilities at YTC.

12 The Proposed Action would result in a minimal increase in wastewater generation due to the relocation of
13 71 personnel (nine active-duty and 62 part time reservists) from the downtown Yakima reserve center to
14 the proposed MCRC Site at YTC. This increase is estimated at approximately the same amount as the
15 center's water demand: about 1,725 gpd during periodic training activities and about 225 gpd for
16 weekdays. This represents approximately a one percent increase in wastewater generation (versus current
17 average flow of approximately 150,000 gpd¹⁴); adequate excess capacity is available at YTC's WWTP
18 (see Section 3.3.2).

19 As described in Section 2.1, if an indoor wash rack design is selected for the MCRC, the wash rack would
20 be plumbed to YTC's sewer system and WWTP. This option would result in no net increase of
21 wastewater generation; wastewater volumes generated by the new MCRC wash rack would replace and
22 be the same as the wastewater volumes generated by MFR activities at the existing ARNG wash rack. If
23 an outdoor/closed-loop wash rack design is selected, wastewater generation from MFR activities would
24 decrease accordingly.

25 Overall increases in wastewater generation due to the Proposed Action would be minor. As a result, the
26 Proposed Action would have no significant impact on YTC's wastewater system.

27 **4.3.1.3 Stormwater**

28 The increase in impervious surfaces from the construction of buildings and parking areas would cause
29 minor increases in the volume and velocity of stormwater runoff at the MCRC Site. To manage this
30 increased stormwater, the Proposed Action would include a stormwater management facility (a
31 stormwater pond, maintained in good working condition) and would also incorporate "low impact
32 design," a suite of stormwater management techniques that minimize and treat stormwater to avoid
33 negative impacts to water quality (USMC 2009). The proposed MCRC Site would also be graded and

¹³ Water demanded by the members of Company B who already train at the current MRF vehicle maintenance facility at YTC are included in this average demand.

¹⁴ Wastewater generated by the members of Company B who already train at the current MRF vehicle maintenance facility at YTC are included in this average flow.

1 sloped to promote efficient drainage (including limiting stormwater drainage to Tipp Road) and would
2 include erosion control features along roads during construction (USMC 2009), such as silt fences and
3 gravel aprons at construction vehicle entry points. The completed facility will be regulated in accordance
4 with the YTC Industrial Storm Water Pollution Prevention Plan. As a result, the Proposed Action would
5 have no significant impact on stormwater runoff at YTC.

6 **4.3.1.4 Energy**

7 Electrical and natural gas service is provided to the AFRC, located approximately 600 feet south of the
8 proposed MCRC Site (see Figure 4-1). Extension of these utilities to the MCRC Site would likely be
9 achieved without impacting traffic patterns or other buildings or facilities at YTC. The energy-using
10 portions of the proposed MCRC facility would be small (less than 47,000 SF¹⁵), and would be designed to
11 be energy efficient (e.g., meeting LEED Silver and Federal Energy Act standards). Company B's current
12 vehicle maintenance facility is already located at YTC, so the construction of the proposed MCRC would
13 not result in any net increase in electricity demand from this use. The amount of additional electricity
14 required by additional active-duty and reserve personnel being transferred to YTC as a result of the
15 Proposed Action would be minimal, and would have no significant impacts on YTC's electric and natural
16 gas supply.

17 **4.3.1.5 Solid Waste**

18 Construction debris would be recycled to the extent practicable, while the remaining debris would be
19 disposed of at an off-site permitted landfill. The additional generation of non-hazardous solid waste by
20 Company B personnel resulting from operation of the Proposed Action would be expected to be
21 proportional to the increase in the number of personnel at YTC, which is approximately 2 to 3 percent
22 (see Section 4.2.1.1). Therefore, the Proposed Action would not have a significant affect on YTC's solid
23 waste disposal system.

24 **4.3.1.6 Emergency/Medical Services**

25 The additional demand for emergency services and medical care for Company B personnel resulting from
26 the Proposed Action would be expected to be proportional to the increase in the number of personnel at
27 YTC, which is approximately 2 to 3 percent (see Section 4.2.1.1). This increase in demand would have no
28 significant affect on emergency/medical care at YTC.

29 **4.3.2 No Action Alternative**

30 Under the No Action Alternative, the demand for potable water, wastewater treatment, energy, solid
31 waste disposal, and emergency services/medical care at YTC would not change.

¹⁵ This includes all elements of the MCRC described in Section 2.1 except for the tactical vehicle parking area.

1 **4.4 TRANSPORTATION AND TRAFFIC**

2 **4.4.1 Proposed Action**

3 Traffic on Firing Center Road and I-82 would increase over the short term as a result of the Proposed
4 Action, as construction-related vehicles (primarily construction workers, but also including construction
5 deliveries) enter and exit YTC. Construction-related traffic could potentially increase delays at the main
6 YTC gate due to security and/or inspection requirements, but these effects would be small and short-term,
7 and are not expected to have significant impacts on traffic and transportation.

8 The relocation of nine full-time active-duty personnel from the MFR facility in downtown Yakima to the
9 proposed MCRC at YTC would add an average of no more than nine round trips per day, a one to two
10 percent increase in average weekday traffic compared to the 500-800 vehicles that currently enter YTC
11 each day (see Section 3.4). Approximately 62 reservists who currently work at the downtown MCRC
12 would report to YTC for periodic (i.e., monthly) weekend training activities as part of the Proposed
13 Action. This increase would represent about two to three percent of the 2,200 personnel that typically
14 train at YTC (US Army 2010). This increase in personnel for training would also represent a proportional
15 (minimal) increase in weekend traffic volume. Under a worst-case scenario, these “new” activities at YTC
16 could increase traffic on Firing Center Road by as many as 71 cars during a single peak hour if every
17 member of Company B reported for an event during a single hour in separate vehicles. Given the traffic
18 patterns and volumes described in Section 3.4, the overall increases in traffic on Firing Center Road from
19 the Proposed Action are likely to be minimal. Overall, the Proposed Action would have no significant
20 impact on traffic and transportation at YTC and on regional roads.

21 **4.4.2 No Action Alternative**

22 Under the No Action Alternative, existing traffic patterns in and around YTC would continue unchanged.
23 There would be no short-term increase in traffic due to construction and deliveries, and no significant
24 long-term increase in permanent employee traffic.

25 **4.5 AIR QUALITY**

26 **4.5.1 Proposed Action**

27 Air emissions associated with the Proposed Action would affect the South Central Washington Interstate
28 Air Quality Control Region (40 CFR part 81.189, 2009). As described in Section 3.5, this Air Quality
29 Control Region is designated as an attainment area for all criteria pollutants except for PM₁₀ and CO. The
30 proposed MCRC would be located just outside of the PM₁₀ maintenance area and approximately 4.5 miles
31 from the CO maintenance area. Due to its proximity to those maintenance areas, the Proposed Action was
32 assessed against a general conformity *de minimis* threshold of 100 tons per year for PM₁₀ and 100 tons per
33 year of CO.^{16, 17}

¹⁶ 100 tpy is consistent with the requirements for a criteria pollutant (PM₁₀ or CO) maintenance area (40 CFR part 93.153, subpart B, 1993).

1 Construction activities associated with the Proposed Action would result in, temporary increases in
 2 criteria pollutant emissions. Specifically, there would be a temporary increase in fugitive dust (PM₁₀ and
 3 PM_{2.5}) from surface disturbance during construction (e.g., earth moving, grading, and similar activities),
 4 fugitive VOCs from building interior coatings and parking space coatings, combustion emissions from
 5 non-road and on-road construction equipment/vehicle use, and combustion emissions from construction
 6 worker commuting. These temporary impacts would not be significant, and would be generally limited to
 7 the immediate vicinity of the construction area. Any fuel burning electricity power source, such as a
 8 generator, used during construction will be reported to YTC Directorate of Public Works—Environmental
 9 Division.

10 Table 4-1 summarizes the anticipated construction emissions of criteria pollutants as a result of the
 11 Proposed Action. As described above, PM₁₀ and CO emissions were compared to the general conformity
 12 *de minimis* threshold, while estimates of other criteria pollutant emissions are provided for information
 13 only. Construction is expected to be completed within one year (2011). Detailed information on the air
 14 emissions calculations and assumptions used are contained in Appendix D of this document.

15 **Table 4-1. Emissions from the Proposed Action**

Construction Emission Sources	Emission Estimates (tons) ¹					
	NO _x	VOC	CO	SO ₂	PM ₁₀	PM _{2.5}
Fugitive Dust from surface disturbance during construction	0	0	0	0	2.15	0.22
Fugitive VOCs from building interior coatings	0	0.07	0	0	0	0
Fugitive VOCs from parking space coatings	0	0.02	0	0	0	0
Combustion emissions from nonroad and onroad construction equipment/vehicle use	4.64	0.49	2.08	0.41	0.31	0.30
Combustion emissions from construction worker commute	0.28	0.28	2.73	0.004	0.03	0.02
Total construction emissions	4.64	0.58	2.08	0.41	2.46	0.51
Conformity <i>de minimis</i> Thresholds for Maintenance Areas	NA ²	NA ²	100	NA ²	100	NA ²
Operations Emission Sources	Emission Estimates (tons per year) ¹					
	NO _x	VOC	CO	SO ₂	PM ₁₀	PM _{2.5}
Boilers (2 gas-fired, output to be determined)	0.39	0.02	0.31	0.002	0.03	0.03

Notes:

¹: See Appendix D for detailed information on the air emission calculations and assumptions used

²: NA = Not applicable because the area is in attainment for this pollutant

16 The Proposed Action’s construction emissions of PM₁₀ and CO are less than three percent of the
 17 conformity *de minimis* thresholds for maintenance areas. In keeping with state law, fugitive dust
 18 deposition on adjacent private property would be controlled.¹⁸ A dust control plan would be developed to
 19 control fugitive dust during construction (see Section 5.4). Emissions of other criteria pollutants are also

¹⁷ In addition, emissions from the Proposed Action will be included in future emissions calculations that determine YTC’s Title V permit status.

¹⁸ §173-400-040(2) of the Washington Administrative Code prohibits deposition of particulate matter “in sufficient quantity to interfere unreasonably with the use and enjoyment of the property upon which the material is deposited.”

1 small. Accordingly, construction of the Proposed Action would have no significant impact on local air
2 quality.

3 The Proposed Action would include two new boilers for building heating. The size and output of these
4 boilers will be determined as part of detailed facility design. A complete inventory of this equipment
5 will be provided to the JBLM YTC Environmental Division for review prior to equipment
6 installation.¹⁹ Estimated new air emissions from these boilers are shown in Table 4-1. The increased
7 emissions from the Proposed action are expected to be offset by decreased emissions at the ARNG-
8 operated vehicle maintenance facility that Company B currently uses at YTC.

9 A minor amount of fugitive dust from the MCRC Site could potentially occur during operation of the
10 Proposed Action, due to wind erosion or vehicle use. A landscaping plan would address this fugitive dust
11 and erosion by ensuring that the MCRC Site is properly revegetated and stabilized (see Section 5.4).

12 The Proposed Action would result in the relocation of nine active-duty personnel and approximately 62
13 reservists from the downtown Yakima reserve center to YTC. These relocations would increase the
14 number of trips to YTC by two to three percent (see Section 4.4). The emissions increases due to these
15 trips would be minimal.

16 The closest PSD Class I area, 60 miles from (and upwind of) YTC (see Section 3.5), would not be
17 affected by the Proposed Action. Estimated criteria pollutant emissions associated with the Proposed
18 Action would not violate the NAAQS or Washington State AAQS, nor would it affect a PSD Class I area.

19 Based on the findings described in this section the Proposed Action would have no significant impact on
20 air quality.

21 **4.5.2 No Action Alternative**

22 Under the No Action Alternative, the air emissions associated with the proposed MCRC would not occur.

23 **4.6 NOISE**

24 **4.6.1 Proposed Action**

25 During construction, the Proposed Action would result in temporary increases in noise in the vicinity of
26 the MCRC Site. The primary sources of construction-related noise would be the use of heavy trucks (e.g.,
27 dump trucks, concrete mixers), bulldozers, backhoes, generators, and ground compactors, which generate
28 noise during site and foundation preparation, construction, and finishing work. The levels of noise
29 generated by these types of vehicles and equipment are shown in Table 4-2.

30 The use of heavy equipment during site preparation and construction would generate noise levels above
31 average ambient noise levels for receptors closest to the construction site. As stated in Section 3.6, the
32 proposed MCRC Site is located within the LUPZ, in which ambient noise limits are less than 65 ADNL

¹⁹ If the aggregate heat input of the two boilers exceeds 4,000,000 Btu/hr., a New Source Review through YRCAA will be required before equipment installation. The aggregate heat input of the new boilers at the proposed MCRC are not expected to exceed this threshold.

(aviation activity), less than 62 dB CDNL (large caliber weapons), or less than 87 PK 15 (met) (small arms weapons). The closest receptors are approximately six residences located within approximately 500 feet of the MCRC Site. At this distance, typical noise levels from construction activities similar to those expected for the Proposed Action (see Table 4-2) may exceed LUPZ limits. However, these construction noise levels would be temporary and localized.

Table 4-2. Peak Sound Level of Heavy Equipment

Equipment	Noise Level ¹ (dBA)
Bulldozer	62-95
Scraper	76-98
Front Loader	77-94
Backhoe	74-92
Grader	72-92
Crane	70-94

Source: Table 4-2 in USACE 2007.

Notes:

¹ From a single source at a distance of 50 feet

During operations, activities at the proposed MCRC would not be substantially different from those already undertaken by MRF personnel at YTC. Thus, the Proposed Action would result in no substantial changes to baseline noise levels due to MCRC activities. As described in Section 4.4, traffic volumes on Firing Center Road could increase, but the noise effect of this increased vehicle traffic is expected to be minimal compared to the noise from existing traffic flows and noise from I-82, approximately one mile from the MCRC Site (USACE 2007). Therefore, the Proposed Action would have no significant impact on noise.

4.6.2 No Action Alternative

Under the No Action Alternative, existing noise conditions at YTC would remain relatively unchanged.

4.7 CULTURAL RESOURCES

4.7.1 Proposed Action

Construction of the proposed MCRC would disturb approximately two acres of previously undeveloped land within the Cantonment Area at YTC. The Cantonment Area has been previously surveyed for cultural resources; none of YTC's known archaeological sites occur within the Cantonment Area, and the Cantonment Area (including the MCRC Site) does not contain any structures eligible for listing on the NRHP (see Section 3.7.1). The Proposed Action would not restrict access to, nor would it affect views to or from any significant cultural site. Therefore, the MFR has determined that the Proposed Action would have no effect on any historic resources eligible for the NRHP, and has requested comments from the SHPO and the Yakama and Wanapum Tribes.

In the event that any archaeological sites, human remains, funerary items, or associated artifacts are discovered during construction, construction activities would cease immediately. The YTC Cultural

1 Resources Manager and other relevant officials would be notified, and if necessary, interested federally
2 recognized tribes. Additional mitigation efforts may be required in the event of such discoveries.

3 **4.7.2 No Action Alternative**

4 The No Action Alternative would have no effect on cultural resources. Existing resources would continue
5 to be managed as under the 2008-12 ICRMP.

6 **4.8 NATURAL RESOURCES**

7 **4.8.1 Proposed Action**

8 **4.8.1.1 Geology, Topography, and Soils**

9 The Proposed Action would disturb approximately two acres of previously disturbed soils at the proposed
10 MCRC Site. Within this two-acre area, existing native soil structure would in some areas be paved. Soils
11 on the remainder of the site would remain unchanged. The Proposed Action would not cause widespread
12 impacts on topography, although some grading would likely be required to construct foundations and
13 provide adequate drainage. MFR would also implement erosion and sediment control measures to address
14 potential impacts to soils and topography. The Proposed Action would involve limited grading, which
15 would have no effect on geology.

16 Soils specifically suited to agricultural uses may be protected under the Federal Farmland Protection
17 Policy Act. Conversion of these soils from agricultural to nonagricultural uses is discouraged. Specifically
18 protected are cultivated areas identified as prime farmland, unique farmland, and farmland that is of local
19 or statewide importance. The soil type at the proposed MCRC Site, Willis silt loam - 2 to 5 percent slope,
20 is considered by NRCS to be a prime farmland soil if irrigated (NRCS 2009). The proposed MCRC Site is
21 neither in current agricultural production nor irrigated. Furthermore, these areas are not likely to be
22 converted to agricultural uses in the foreseeable future because of their presence within the YTC
23 boundary. Therefore, the Proposed Action would have no significant impacts on topography and soils.

24 **4.8.1.2 Water Resources, Wetlands, and Floodplains**

25 As indicated in Section 3.8.2, there are no perennial streams or other surface water bodies, wetlands, or
26 floodplains on the proposed MCRC Site, therefore the Proposed Action would have no effect on these
27 resources. The potential effects of stormwater runoff are discussed in Section 4.3.1.3.

28 **4.8.1.3 Vegetation**

29 The Proposed Action would result in the removal of approximately two acres of existing native and non-
30 native vegetation. Because the MCRC Site is located in the relatively developed Cantonment Area, it
31 provides very limited vegetation value. The June 2010 field survey of the proposed MCRC Site found a
32 patchy distribution of Russian knapweed on the site. Russian knapweed is considered a Class B noxious
33 weed by the State of Washington. MFR's mitigation strategies with regard to vegetation are described in
34 section 5.4. Because MFR will revegetate disturbed areas with native species, will prepare a landscaping
35 plan for the site (see Section 2.1), and will control all noxious weeds on the Site in accordance with

1 YTC's Integrated Pest Management Plan, the Proposed Action would have no significant impact on
2 vegetation.

3 **4.8.1.4 Wildlife**

4 The Proposed Action would remove approximately two acres of grassland habitat. While the MCRC Site
5 has never been developed, the Cantonment Area is largely developed and has been disturbed (Mee 2010),
6 which limits the suitability of the MCRC Site as habitat. Wildlife species such as those described in
7 Section 3.8.4 may be present at the MCRC Site, but ample habitat for these species exists in other
8 portions of YTC and in surrounding areas.

9 **4.8.1.5 Special Status Species**

10 The Proposed Action would have no effect on any federal-listed threatened or endangered species, as
11 none are known to occur at YTC, none were observed during the June 2010 field inspection of the MCRC
12 Site, suitable habitat for these listed species is not present, and the site abuts both the Cantonment Area
13 and off-base low density residential areas, which further limit the suitability of the site for any of the
14 listed threatened or endangered species.

15 The June 2010 field inspection documented one Townsend's ground squirrel at the western edge of the
16 MCRC Site and three burrow complexes (Leingang 2011) that could provide habitat for either the
17 Townsend's ground squirrel or the burrowing owl (Mee 2010). Both of these species are considered
18 Species of Concern by USFWS and are designated as Candidate species by WDFW. The field inspection
19 found no burrowing owls. The MFR has committed to having a biologist on-site during site preparation
20 to ensure that special status species, if present, are protected and relocated to other suitable habitat at
21 YTC. Therefore, MFR concludes that its Proposed Action would have no effect on any federally-listed
22 threatened or endangered species, and has requested comments from the USFWS.

23 The Proposed Action would also have no effect on any state-listed threatened or endangered species, as
24 the MCRC Site does not provide suitable habitat for any of the listed species, nor were any observed
25 during the field inspection of the MCRC Site.

26 Based on these findings, the Proposed Action would have no significant impact on wildlife.

27 **4.8.2 No Action Alternative**

28 The No Action Alternative would have no effect geology, topography, soils, water resources, wetlands,
29 floodplains, vegetation, wildlife, and any federal or state listed species.

30 **4.9 HAZARDOUS MATERIALS AND WASTE**

31 **4.9.1 Proposed Action**

32 Construction of the proposed MCRC is not expected to generate significant amounts of hazardous waste.
33 Any hazardous waste that is generated from construction would be disposed of following applicable
34 federal and state procedures. During operations, there would be no net regional increase in the generation
35 of hazardous materials and wastes, as the Proposed Action would not result in any changes to hazardous

1 materials generation associated with Company B's training or the maintenance activities required to
2 support the training. Hazardous materials and waste used and/or stored at the MCRC in downtown
3 Yakima would be disposed of following applicable federal and state procedures. MFR would comply with
4 YTC's SPCC Plan. Hazardous materials generated during MCRC operation would be handled through
5 YTC's One Stop Yard. The Proposed Action will include enclosed, separate structures for storage of
6 hazardous materials, flammable storage for any flammable hazardous materials, and a satellite site for
7 accumulation and storage of hazardous waste. The Proposed Action would have no significant impact on
8 hazardous materials and waste (see Section 4.3 for a discussion of solid waste).

9 **4.9.2 No Action Alternative**

10 The No Action Alternative would have no effect with regard to hazardous materials and waste.

11 **4.10 SUMMARY OF IMPACTS**

12 Table 4-3 summarizes the beneficial and adverse impacts of the two alternatives considered: the No
13 Action Alternative and the Proposed Action. The Proposed Action includes construction of a new MCRC
14 for Company B within the boundaries of YTC. Under the No Action Alternative, these activities would
15 not occur and existing conditions at Yakima MFR reserve center and leased maintenance facilities at YTC
16 would remain the same.

Table 4-3. Summary of Impacts Associated with the Proposed Action and No-Action Alternative

Impact	No Action Alternative	Proposed Action
Land Use	No changes	The proposed MCRC use is consistent with land uses within the Cantonment Area at YTC and with local zoning and comprehensive planning. It would adversely affect the views from approximately six nearby residences, but the proposed buildings would only be one-story high and only occupy approximately 2 acres of the 12.5 acre site. No significant impact on land use at YTC or in adjacent areas.
Socioeconomics	No changes	Short term direct and indirect benefits to the ROI during construction. The Proposed Action would not result in any new permanent employment in the ROI, and would thus have no effects on regional demographics. The minority and low income population of the project's ROI is not meaningfully different than the surrounding area, and the economic impacts of the Proposed Action are positive. There are no children regularly present at YTC. Therefore, the Proposed Action would not result in any disproportionately adverse effects on these populations.
Transportation and Traffic	No changes	Short-term traffic increases at YTC due to construction of the Proposed Action. Minimal increases in weekday traffic due to the relocation of nine active-duty staff. Small (2-3%) increase in average weekend traffic during Company B's training activities, due to the relocation of 9 active duty personnel and approximately 62 reservists from downtown Yakima to YTC. Overall, no significant impacts on traffic or transportation.
Infrastructure, Utilities, and Services	No changes	Small increases (approximately 2-3%) in demand for potable water, electricity, and medical services, and generation of wastewater and solid waste at YTC. Stormwater would be managed through facility design and the existing YTC stormwater management system. No significant impacts on infrastructure, utilities, and services.
Air Quality	No changes	Short-term, temporary increases in emissions due to construction equipment and fugitive dust. Minor (< 1 ton per year) emissions from two boilers included in the Proposed Action are expected to be offset by decreased emissions at the ARNG-operated vehicle maintenance facility at YTC currently used by Company B. Negligible increases in weekday automobile emissions due to relocated Company B personnel. Small increases in weekend automobile emissions during Company B's training activities. Overall, no significant impact on air quality.
Noise	No changes	Short-term, temporary increases in noise from construction equipment. Minimal permanent increases in noise due to increased traffic from relocated Company B personnel. No significant impact on noise.
Cultural Resources	No changes	No historic properties or cultural resources are present in the vicinity of the Site. No effect on any sites eligible for the National Register.

Table 4-3. Summary of Impacts Associated with the Proposed Action and No-Action Alternative

Impact	No Action Alternative	Proposed Action
Natural Resources	No changes	<p>Some alterations of topography and soils due to site clearing, filling, grading, and construction. No impacts on the underlying geology. The Proposed Action would require removal of approximately two acres of native and non-native vegetation, including a noxious weed.</p> <p>There are no federal or state listed threatened or endangered species present at the site. One individual Townsend’s ground squirrel (a Federal Species of Concern and a state candidate species) was observed on the proposed MCRC Site. MFR proposes to have a biologist on-site during site preparation to ensure this species, if present, is properly relocated to other suitable habitat at YTC. Overall, no significant impacts on natural resources.</p>
Hazardous Materials and Waste	No changes	<p>Hazardous materials/waste used and/or stored at the current reserve center in Yakima would be disposed of following applicable state and federal procedures. Hazardous wastes from the proposed MCRC would be managed through the YTC One Stop Yard. No significant impacts from hazardous materials and waste.</p>

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1 **5.0 CUMULATIVE IMPACTS**

2 **5.1 FORESEEABLE ACTIONS AND CUMULATIVE IMPACTS**

3 Cumulative impacts are “the impact on the environment which results from the incremental impact of the
4 action when added to other past, present, and reasonably foreseeable future actions regardless of what
5 agency (federal or non-federal) or person undertakes such other actions” (40 CFR 1508.7, 1986).
6 Cumulative impact analyses must define the scope of these other actions and their interrelationship with
7 the Proposed Action, specifically considering geographic and temporal overlaps among the Proposed
8 Actions and other actions. The cumulative impact analysis must also evaluate the nature of interactions
9 among these actions (CEQ 1997).

10 Cumulative impacts are most likely to arise when a relationship or synergism exists between the Proposed
11 Action and other actions expected to occur in a similar location or during a similar time period. Actions
12 overlapping with or in proximity to the Proposed Action would be expected to have more potential for
13 cumulative effects than those more geographically separated (CEQ 1997).

14 The following should be considered in identifying cumulative impacts (CEQ 1997):

- 15 • Whether resources in question are especially vulnerable to incremental effects;
- 16 • whether the Proposed Action is one of several similar actions in the same geographic area;
- 17 • whether other activities in the area have similar effects on the resources in question;
- 18 • whether past or ongoing effects of have been historically significant for particular resources; and
- 19 • whether other analyses in the area have identified a cumulative effects concern.

20 The affected environment described in Chapter 3 of this document describes the present-day condition of
21 resources that could be affected by the Proposed Action, thereby accounting for past actions that have a
22 nexus with the Proposed Action. This cumulative effects analysis therefore focuses primarily on
23 concurrent and future actions.

24 The geographical scope of the potential impacts associated with the Proposed Action is primarily within
25 the boundaries of YTC, except for short term impacts on traffic and emissions that could affect areas
26 outside of the boundaries of YTC. Accordingly, information on other projects that may be planned in the
27 vicinity of YTC was requested from the Yakima and Kittitas County governments in consultation letters
28 sent on 2 September 2010. MFR received no response to these requests.

29 **5.1.1 Recent, Ongoing, and Reasonably Foreseeable Actions**

30 The recent, ongoing, and reasonably foreseeable actions listed below have been identified in the vicinity
31 of the Proposed Action. Together with the Proposed Action, these actions are herein referred to as the
32 Potential Cumulative Actions.

1 **5.1.1.1 YTC Armed Forces Reserve Center**

2 Completed in 2010, the YTC AFRC was part of the Proposed Action evaluated in *Yakima Training*
3 *Center, Washington; Base Realignment and Closure (BRAC) Actions Final EA* (USACE 2007). It is
4 located approximately 200 feet south of the proposed MCRC Site and accommodates USAR and ARNG
5 units formerly based in other portions of Washington State.

6 **5.1.1.2 Grow the Army (GTA) Program at Joint Base Lewis-McChord and YTC**

7 This Proposed Action would consist of stationing additional Army units at Joint Base Lewis-McChord
8 (JBLM) (which operates YTC) to support the GTA program. The GTA Program at YTC would result in
9 new training patterns on YTC's CIA and MPRC, and would result in more frequent use of YTC by Army,
10 USAR, and ARNG units. However, "for the foreseeable future, the cantonment area at YTC would
11 continue to support...units that travel to YTC temporarily for training" (US Army 2010).

12 The Army's EIS for the GTA Program identifies numerous impacts (including some significant impacts)
13 to resources at YTC. All of those impacts are associated with YTC's firing ranges; none are associated
14 with the Cantonment Area (US Army 2010).

15 **5.1.2 Methodology for Cumulative Impact Assessment**

16 Resources identified for consideration in the cumulative impact assessment were those that were
17 adversely impacted by the Proposed Action. If the Proposed Action did not result in direct or secondary
18 impacts on a resource, then the Proposed Action by definition could not result in any cumulative effects.
19 Table 5-1 provides a summary of the decision-making process conducted to identify the relevant
20 resources to be considered in this cumulative impact assessment.

21 The resources that have the potential for cumulative impacts are discussed below.

22 **5.1.2.1 Visual Resources**

23 The Proposed Action and the AFRC would both be visible from and collectively diminish views of scenic
24 landscape features such as Yakima and Umtanum Ridges for approximately six residences immediately to
25 the west of the MCRC Site. However, the AFRC replaced older, less aesthetically pleasing buildings on
26 the same site, and incorporates architectural treatments designed to minimize negative visual impacts
27 (USACE 2007). The proposed MCRC would be a one-story building and would only affect
28 approximately two acres of land. These impacts are not significant and the uses are consistent with
29 applicable management plans, therefore, the Proposed Action would not result in a significant cumulative
30 impact on visual resources.

Table 5-1. Scope of Cumulative Impact Evaluations

Resource Area	Potential for Adverse Cumulative Effects	Cumulative Impact Assessment Required
Land Use	The Proposed Action would result in some changes in land use, but these changes are consistent with other uses at YTC and with local comprehensive plans and zoning, so there would no adverse cumulative impact. The Project would have a small adverse effect on visual resources for nearby residences.	Yes, visual resources only
Socioeconomics	All effects are positive.	No
Infrastructure, Utilities and Emergency/Medical Services	The Proposed Action would result in slight increases in demand for potable water, wastewater treatment, electricity, solid waste disposal, and emergency/medical services. Increases in stormwater runoff would be managed using stormwater retention ponds, so no potential cumulative effect would occur.	Yes, potable water, wastewater treatment, electricity, and solid waste disposal only.
Transportation and Traffic	The Proposed Action would result in a slight increase in traffic volumes during both construction and operations.	Yes
Air Quality	<p>The Proposed Action would result in construction-related air emissions, including fugitive dust, but these would only be short term and not significant, and would therefore have negligible potential for cumulative effects. Any fuel burning electricity power source, such as a generator, used during construction will be reported to YTC Directorate of Public Works—Environmental Division.</p> <p>Sources of emissions from the proposed MCRC would include two boilers, minor increases in vehicle usage, and some minor potential fugitive dust from wind erosion and vehicle use, all of which would be negligible. New emissions from boilers are expected to be offset by decreased emissions at buildings currently used by Company B—the ARNG-operated vehicle maintenance facility at YTC and the MCRC in downtown Yakima. The area is in attainment for all NAAQS and the Proposed Action would not affect the nearby PM10 and CO maintenance areas.</p>	No
Noise	The Proposed Action would generate construction noise impacts, but these impacts would only be short term and therefore have no potential cumulative effects. Noise from facility operation would be consistent with noise levels within YTC and would not result in any cumulative effects.	No
Cultural Resources	The Proposed Action would have no effect on any sites potentially eligible for the NRHP.	No
Natural Resources	<p>The Proposed Action would have no effect on geology. It would impact topography, soils, and vegetation on approximately 2 acres due to site grading and filling. Soil and topography on the remainder of the site would be unchanged. Erosion and sediment control measures would be implemented, which would mitigate any adverse impacts to address potential impacts on soils and topography.</p> <p>There are no perennial streams or other surface water bodies, wetlands, or floodplains on the proposed MCRC Site, therefore the Proposed Action would have no effect on these resources and no potential to create cumulative effects.</p> <p>Because the MCRC Site is located in the relatively developed Cantonment Area and has noxious weeds present, it provides very limited native vegetation value. MFR would prepare a landscaping plan (emphasizing retention and enhancement of existing native species). MFR would control noxious weeds on the site as specified</p>	Yes, wildlife only

Table 5-1. Scope of Cumulative Impact Evaluations

Resource Area	Potential for Adverse Cumulative Effects	Cumulative Impact Assessment Required
	in YTC’s Integrated Pest Management Program. The Proposed Action would not affect any federal or state listed threatened or endangered species, but it could affect the Townsend’s ground squirrel, a Federal Species of Concern.	
Hazardous Materials and Waste	The Proposed Action would not result in the generation of any additional hazardous materials/waste, and these materials would be used, stored, transported, and disposed of in accordance with federal regulations.	No

1 **5.1.2.2 Infrastructure, Utilities, and Emergency/Medical Services**

2 The Potential Cumulative Actions would result in some increase in demand for potable water, wastewater
 3 treatment, electricity, solid waste disposal, and medical services at YTC. Both the proposed MCRC and
 4 the AFRC (USACE 2007) would require these utilities and services to support additional personnel based
 5 at YTC; the GTA Program would require the extension of electricity to new training ranges proposed
 6 under that initiative (US Army 2010); and construction of the AFRC required the demolition of existing
 7 buildings, generating approximately 190 tons of construction debris²⁰ (USACE 2007). These increased
 8 demands, however, would not exceed the capacities of the existing infrastructure, utilities, and services at
 9 YTC, and therefore would not result in a significant cumulative impact on these facilities or services.

10 **5.1.2.3 Traffic and Transportation**

11 The Potential Cumulative Actions would increase traffic volumes on roads near YTC (specifically, Firing
 12 Center Road) and at the YTC main gate during both construction and operations. The construction phase
 13 traffic impacts would be temporary and would not overlap in time, and thus would not constitute a
 14 cumulative impact. During operations, weekend peak hour traffic would increase because of the Proposed
 15 Action by as much as 71 vehicles per day (only on days when Company B has training assemblies) and
 16 24 vehicles for the AFRC (USACE 2007). More frequent training activities associated with the GTA
 17 Program would result in a 50-65 percent increase in the number of convoys between JBLM and YTC (US
 18 Army 2010). These increased traffic volumes would not exceed the functional capacity of Firing Center
 19 Road (or other regional roads), nor would they exceed the YTC main gate’s processing rate of
 20 approximately 300-400 vehicles per hour (USACE 2007). Convoy traffic would also avoid morning and
 21 afternoon rush hours on regional roads (US Army 2010). While more frequent convoys could increase the
 22 frequency of delays at the YTC gate, the duration of these delays would not longer than already
 23 experienced. Accordingly, the Proposed Action would not result in any significant cumulative impacts on
 24 traffic and transportation.

25 **5.1.2.4 Wildlife**

26 The Proposed Action would disturb approximately two acres of grassland habitat near the location where
 27 one Townsend’s ground squirrel, and near the locations of three burrows that could potentially be used by

²⁰ Debris disposal for the AFRC was managed by a private contractor.

1 Townsend's ground squirrels, a Federal Species of Concern, was observed. The AFRC occupied a
2 brownfield site and did not have any affect on any sensitive wildlife, including the Townsend's ground
3 squirrel (USACE 2007). The GTA Program would have the potential to affect a significant amount of
4 wildlife habitat, but the Townsend's ground squirrel was not identified as being present in the potentially
5 affected area. The MFR has committed to having a biologist on-site during site preparation to ensure that
6 special status species, if present, are protected and relocated to other suitable habitat at YTC. Therefore,
7 the Proposed Action would not result in any significant cumulative effects on any federal or state listed
8 threatened or endangered species. The Proposed Action could result in the displacement of one or more
9 Townsend's ground squirrels, but other adjacent habitat is available and there would be no significant
10 cumulative effects.

11 **5.1.2.5 Summary**

12 This EA concludes that the Proposed Action result in no significant cumulative effects on any resources.

13 **5.2 IRREVERSIBLE AND IRRETRIEVABLE COMMITMENT OF NATURAL AND DEPLETABLE** 14 **RESOURCES**

15 NEPA requires that environmental analysis include identification of "...any irreversible and irretrievable
16 commitments of resources which would be involved if the Proposed Action should it be implemented"
17 (42 USC 4332.c.ii, 1982). Irreversible and irretrievable resource commitments are related to the use of
18 non-renewable resources and the effects that the uses of these resources have on future generations.
19 Irreversible effects primarily result from the use or destruction of a specific resource (e.g., energy or
20 minerals) that cannot be replaced within a reasonable time frame. Irretrievable resource commitments
21 involve the loss in value of an affected resource that cannot be restored as a result of the action (e.g., the
22 disturbance of a cultural site).

23 Implementation of the Proposed Action would result in a increase in fuels used by ground-based vehicles,
24 particularly during the site clearance and preparation, and the materials used in construction. The small
25 amount of nonrenewable resources used during this period would be irretrievably lost or depleted. To the
26 degree that the proposed MCRC would be a permanent structure, it would also result in the irreversible
27 and irretrievable loss of approximately two acres of grassland habitat. All other impacts associated with
28 the Proposed Action would be temporary in nature.

29 **5.3 RELATIONSHIP BETWEEN LOCAL SHORT-TERM USE OF THE ENVIRONMENT AND** 30 **LONG-TERM PRODUCTIVITY**

31 NEPA requires an analysis of the relationship between a project's short-term impacts on the environment
32 and of the effects that these impacts may have on the maintenance and enhancement of the long-term
33 productivity of the affected environment (42 USC 4332.c.iv, 1982). Impacts that narrow the range of
34 beneficial uses of the environment are of particular concern. This refers to the possibility that choosing
35 one development option reduces future flexibility in pursuing other options, or that giving over a parcel of
36 land or other resource to a certain use eliminates the possibility of other uses being performed at the site.

1 There is no evidence that the MCRC Site has ever been developed. No unique habitat or ecosystems
2 would be lost due to the Proposed Action. Implementation of the Proposed Action or No Action
3 Alternative would not result in any impacts that would reduce environmental productivity, permanently
4 narrow the range of beneficial uses of the environment, or pose long-term risks to health, safety, or the
5 general welfare of the public.

6 **5.4 MITIGATION MEASURES**

7 This EA has not identified any significant impacts resulting from the Proposed Action that require
8 mitigation. MFR has already proposed to implement various measures and to follow specific Best
9 Management Practices (BMPs) that can help further reduce impacts.

10 **Mitigation Measures**

11 MFR proposes the following mitigation measures as part of the Proposed Action:

- 12 • Provision of a stormwater retention pond, maintained in good working condition;
- 13 • Provision of erosion and sediment control measures to address potential impacts to soils and
14 topography;
- 15 • Provision of an oil/water separator at the vehicle wash rack;
- 16 • Ensuring the presence of an archaeologist and a biologist during site clearing and grading, in the
17 event that any unanticipated archaeological artifacts or potential species of concern (e.g.,
18 Townsend's ground squirrel, burrowing owl) are found; and
- 19 • Control of Russian knapweed and any other noxious plants found on the site, in accordance with
20 the YTC Integrated Pest Management Plan.

21 **Best Management Practices**

22 MFR proposes to employ the following BMPs in constructing and operating the Proposed Action:

- 23 • Construction of the MCRC to LEED Silver standards to reduce energy and water use;
- 24 • Provision of hazardous materials storage, including enclosed, separate structures for storage of
25 hazardous materials, flammable storage for any flammable hazardous materials, and a satellite
26 site for accumulation and storage of hazardous waste;
- 27 • Use of low impact design stormwater management techniques for the MCRC to minimize
28 stormwater impacts on soil and water quality (including limiting stormwater drainage to Tipp
29 Road);
- 30 • Development and implementation of appropriate SPCC Plan;
- 31 • Preparation and implementation of a dust control plan to manage fugitive dust and wind erosion
32 during construction;

- 1 • Preparation and implementation of a landscaping plan and use of native plant species for
2 landscaping and dust and erosion control during operations;
- 3 • Restriction of construction operations to 0730 – 1630 hours, Monday through Friday, to avoid
4 unnecessary disturbance to residences adjacent to the YTC boundaries; and
- 5 • Consistent with mission-essential requirements, consideration of views from and minimization of
6 light pollution to neighboring private property through facility design and siting.

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6.0 LIST OF PREPARERS

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U.S. Marine Corps

Name	Title	Affiliation
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Richard Godchaux	Environmental Director	Marine Forces Reserve New Orleans, LA

ERM Inc.

Name	Title	Education	Years Experience
David Blaha	Partner in Charge	B.A. Biology; M.S. Environmental Management	26
Larry Ward	Senior Consultant	B.S. Business; J.D., Law	28
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Jason Willey	Project Scientist	B.S. Biology M.S. Environmental Science and Policy	10
Adeyinka Afon	Project Engineer	B.S. Chemical Engineering; M.S.E. Environmental Process Engineering	5
Casey Warner	Associate Scientist	B.A. Urban and Community Planning; M.A. Urban and Regional Planning	5

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- 42 USC §4321-47 (National Environmental Policy Act of 1969, as amended), 2000
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APPENDIX A AGENCY CONSULTATIONS AND RESPONSES

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UNITED STATES MARINE CORPS
Marine Forces Reserve, FMF
4400 Dauphine Street
New Orleans, LA 70146-5400

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02 Sep 10

From: Environmental Manager, Facilities, Marine Forces Reserve
To: Jon Grettenberger, US Fish and Wildlife Service, Consultation and
Technical Assistance Division, 510 Desmond Drive SE, Lacey, WA
98503.

Subj: SECTION 7 CONSULTATION, YAKIMA, WASHINGTON

1. The Marine Forces Reserves (MARFORRES) is preparing an Environmental Assessment (EA) of its proposal to construct a new Marine Corps Reserve Center (MCRC) for Marine Corps Reserve, Company B, 4th Tank Battalion at the Army Reserve National Guard (ARNG) Yakima Training Center (YTC) in Yakima Washington. The MCRC would include a combat vehicle maintenance facility and a training reserve center as well as ancillary facilities including vehicle holding sheds, tactical vehicle parking areas, wash racks, security and fences, gate, utilities, tank trail, and access road. The proposed location for the facilities is at the Yakima Training Center as illustrated on the attached map (Figure 1). The combat vehicle maintenance facility and training reserve center would occupy a one-story steel framed structure. Site preparation would include grubbing, clearing, and leveling the area for construction of the structure. The entire Proposed Action (including the reserve training center, the combat vehicle maintenance facility, and associated ancillary facilities) would be located at Site C, an undeveloped 12.5 acre parcel north of the intersection of Wilson and Tipp Roads in the southern portion of the YTC (Figure 2)

2. In 2007 the US Army Corps of Engineers issued an EA and Finding of No Significant Impact for Base Realignment and Closure actions at the YTC. This document indicated that although listed plant species are known to exist at YTC, the parcels that would be affected by the BRAC actions did not constitute suitable habitat for these species and that the BRAC actions would not affect listed species. The site of the Proposed Action is contiguous with the two parcels evaluated in the 2007 BRAC EA, has similar habitat and all have been previously disturbed.

3. Marine Corps Order P5090.2A sets forth the Marine Corps' regulations implementing the National Environmental Policy Act. MCO P5090.2A requires the Marine Corps to comply with the Federal Endangered Species Act, which directs Federal agencies to carry out programs to conserve Federally-listed endangered and threatened plants and wildlife. Development and implementation of these programs must be carried out with the consultation and assistance of the Departments of the Interior (DOI) and Commerce. Based upon the 2007 BRAC EA and a site visit conducted on 25 May 2010, the MARFORRES concludes the proposed action will not affect listed species or critical habitat. MARFORRES requests that the Service notify us within 30 days of receipt of this letter if the Service disagrees with our determination of no effect.

Subj: SECTION 7 CONSULTATION, YAKIMA, WASHINGTON

4. Point of contact for this matter is Richard Godchaux at 504-678-5067.


R. L. GODCHAUX

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UNITED STATES MARINE CORPS
Marine Forces Reserve, FMF
4400 Dauphine Street
New Orleans, LA 70146-5400

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02 Sep 10

From: Environmental Manager, Facilities, Marine Forces Reserve
To: Eric Bertrand, Wildlife Biologist, Washington Department of Fish
and Wildlife, 1701 South 24th Avenue, Yakima, WA 98902-5720.

Subj: CONSTRUCTION PROJECTS AT YAKIMA TRAINING CENTER, WASHINGTON

1. The Marine Forces Reserves (MARFORRES) is preparing an Environmental Assessment (EA) of its proposal to construct a new Marine Corps Reserve Center (MCRC) for Marine Corps Reserve, Company B, 4th Tank Battalion at the Army Reserve National Guard (ARNG) Yakima Training Center (YTC) in Yakima Washington. The MCRC would include a combat vehicle maintenance facility and a training reserve center as well as ancillary facilities including vehicle holding sheds, tactical vehicle parking areas, wash racks, security and fences, gate, utilities, tank trail, and access road. The proposed location for the facilities is at the Yakima Training Center as illustrated on the attached map (Figure 1). The combat vehicle maintenance facility and training reserve center would occupy a one-story steel framed structure. Site preparation would include grubbing, clearing, and leveling the area for construction of the structure. The entire Proposed Action (including the reserve training center, the combat vehicle maintenance facility, and associated ancillary facilities) would be located at Site C, an undeveloped 12.5 acre parcel north of the intersection of Wilson and Tipp Roads in the southern portion of the YTC (Figure 2).

2. MARFORRES Fiscal Year 2010 funds, which would support the Proposed Action, expire on September 30, 2010. In order to obligate these funds, MARFORRES must satisfy the requirements of Section 106 of the National Historic Places Act (NHPA) with respect the Proposed Action prior to September 30, 2010, by documenting that the Proposed Action would have no potential to cause effects on historic resources.

3. In 2007 the US Army Corps of Engineers issued an EA and Finding of No Significant Impact for Base Realignment and Closure actions at the YTC. The EA indicated that although listed plant species are known to exist at YTC, the parcels that would be affected by the BRAC actions did not constitute suitable habitat for these species and that the BRAC actions would not affect listed species. The site of the Proposed Action is contiguous with the two parcels evaluated in the 2007 BRAC EA, has similar habitat and all have been previously disturbed. Based upon the 2007 BRAC EA and a site visit conducted on 25 May 2010, the MARFORRES has determined the proposed action will not affect Federally listed species or critical habitat and has notified the US Fish and Wildlife Service and the National Marine Fisheries Service of our no effect determination.

Subj: CONSTRUCTION PROJECTS AT YAKIMA TRAINING CENTER, WASHINGTON

4. The Proposed Action's potential impacts on biological resources would be limited within the boundaries of the YTC. We respectfully request that your office inform us of any state-listed rare, threatened, and endangered species or critical habitats known to occur on the YTC that could be affected by this proposed project within 30 days of receipt of this letter.

5. Point of contact for this matter is Richard Godchaux at 504-678-5067.


R. L. GODCHAUX

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UNITED STATES MARINE CORPS
Marine Forces Reserve, FMF
4400 Dauphine Street
New Orleans, LA 70146-3400

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02 Sep 10

From: Environmental Manager, Facilities, Marine Forces Reserve
To: Deputy State Historic Preservation Officer, Department of
Archaeology & Historic Preservation, PO Box 48343, Olympia WA
98504-8343

Subj: CONSTRUCTION PROJECTS AT YAKIMA TRAINING CENTER, WASHINGTON

1. The Marine Forces Reserves (MARFORRES) is preparing an Environmental Assessment (EA) of its proposal to construct a new Marine Corps Reserve Center (MCRC) for Marine Corps Reserve, Company B, 4th Tank Battalion at the Army Reserve National Guard (ARNG) Yakima Training Center (YTC) in Yakima Washington. The MCRC would include a combat vehicle maintenance facility and a training reserve center as well as ancillary facilities including vehicle holding sheds, tactical vehicle parking areas, wash racks, security and fences, gate, utilities, tank trail, and access road. The proposed location for the facilities is at the Yakima Training Center as illustrated on the attached map (Figure 1). The combat vehicle maintenance facility and training reserve center would occupy a one-story steel framed structure. Site preparation would include grubbing, clearing, and leveling the area for construction of the structure. The entire Proposed Action (including the reserve training center, the combat vehicle maintenance facility, and associated ancillary facilities) would be located at Site C, an undeveloped 12.5 acre parcel north of the intersection of Wilson and Tipp Roads in the southern portion of the YTC (Figure 2).

2. Marine Corps Order P5090.2A sets forth the Marine Corps' regulations implementing the National Environmental Policy Act. MCO P5090.2A and Section 106 of the National Historic Preservation Act require the Marine Corps to consider the impacts of the Proposed Action on cultural resources. In 2005 an archaeological reconnaissance survey was performed for the YTC which concluded that the installation has a low potential for archaeological resources. In 2006 an Integrated Cultural Resources Management Plan (ICRMP) prepared for all Washington Army National Guard installations (including the YTC) noted that "no further archaeological resource assessment is needed for locations that have a low probability for archaeological resources". The 2006 ICRMP specifically indicated that there are no buildings eligible for listing on the National Register of Historic Places at the YTC, and recommended no further architectural evaluations or archaeological investigations be performed at the installation.

Subj: CONSTRUCTION PROJECTS AT YAKIMA TRAINING CENTER, WASHINGTON

3. For these reasons the MARFORRES has concluded that the Proposed Action would not be likely to adversely affect cultural resources. The purpose of this letter is to request the Washington State Historic Preservation Officer's concurrence with this determination as required under Section 106 of the NHPA. We respectfully request that your office respond to our request within 30 days.

6. Point of contact for this matter is Richard Godchaux at 504-678-5067.



R. L. GODCHAUX

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UNITED STATES MARINE CORPS
Marine Forces Reserve, FMF
4400 Dauphine Street
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02 Sep 10

From: Environmental Manager, Facilities, Marine Forces Reserve
To: Deputy State Historic Preservation Officer, Department of
Archaeology & Historic Preservation, PO Box 48343, Olympia WA
98504-8343

Subj: CONSTRUCTION PROJECTS AT YAKIMA TRAINING CENTER, WASHINGTON

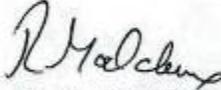
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Subj: CONSTRUCTION PROJECTS AT YAKIMA TRAINING CENTER, WASHINGTON

3. For these reasons the MARFORRES has concluded that the Proposed Action would not be likely to adversely affect cultural resources. The purpose of this letter is to request the Washington State Historic Preservation Officer's concurrence with this determination as required under Section 106 of the NHPA. We respectfully request that your office respond to our request within 30 days.

6. Point of contact for this matter is Richard Godchaux at 504-678-5067.


R. L. GODCHAUX

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UNITED STATES MARINE CORPS
Marine Forces Reserve, FMF
4400 Dauphine Street
New Orleans, LA 70146-5400

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02 Sep 10

From: Environmental Manager, Facilities, Marine Forces Reserve
To: Deputy State Historic Preservation Officer, NOAA National Marine Fisheries Service, Northwest Regional Office, 510 Desmond Drive SE, Ste 103 Lacey, WA 98503

Subj: SECTION 7 CONSULTATION, YAKIMA, WASHINGTON

1. The Marine Forces Reserves (MARFORRES) is preparing an Environmental Assessment (EA) of its proposal to construct a new Marine Corps Reserve Center (MCRC) for Marine Corps Reserve, Company B, 4th Tank Battalion at the Army Reserve National Guard (ARNG) Yakima Training Center (YTC) in Yakima Washington. The MCRC would include a combat vehicle maintenance facility and a training reserve center as well as ancillary facilities including vehicle holding sheds, tactical vehicle parking areas, wash racks, security and fences, gate, utilities, tank trail, and access road. The proposed location for the facilities is at the Yakima Training Center as illustrated on the attached map (Figure 1). The combat vehicle maintenance facility and training reserve center would occupy a one-story steel framed structure. Site preparation would include grubbing, clearing, and leveling the area for construction of the structure. The entire Proposed Action (including the reserve training center, the combat vehicle maintenance facility, and associated ancillary facilities) would be located at Site C, an undeveloped 12.5 acre parcel north of the intersection of Wilson and Tipp Roads in the southern portion of the YTC (Figure 2).

2. In 2007 the US Army Corps of Engineers issued an EA and Finding of No Significant Impact for Base Realignment and Closure actions at the YTC. This document indicated that the BRAC actions would not affect listed species. On July 18, 2007 Mr. Dale Bambrick in NOAA's Ellensburg, WA office indicated that the US Army Corps of Engineers "no effect" determination was appropriate. The site of the Proposed Action is between the two alternative sites evaluated in the 2007 BRAC EA, and adjacent to one of the sites.

3. Marine Corps Order P5090.2A sets forth the Marine Corps' regulations implementing the National Environmental Policy Act. MCO P5090.2A requires the Marine Corps to comply with the Federal Endangered Species Act, which directs Federal agencies to carry out programs to conserve Federally-listed endangered and threatened plants and wildlife. Development and implementation of these programs must be carried out with the consultation and assistance of the Departments of the Interior (DOI) and Commerce.

Subj: SECTION 7 CONSULTATION, YAKIMA, WASHINGTON

4. Given the location of the Proposed Action and the findings of the 2007 BRAC EA the MARFORRES has determined that the Proposed Action would have no effect on listed species under NOAA's jurisdiction. The purpose of this letter is to notify you of the Proposed Action and of MARFORRES' determination of no effect on listed species under NOAA's jurisdiction. MARFORRES requests that you notify us within 30 days of receipt of this letter if NOAA disagrees with our determination of no effect.

5. We have attached a copy of Mr. Bambrick's response to the Army Corps of Engineers regarding their determination of no effect in 2007 for your review as Attachment 1 to this letter.

6. Point of contact for this matter is Richard Godchaux at 504-678-5067.

R. L. GODCHAUX

Copy To:
File



UNITED STATES MARINE CORPS
Marine Forces Reserve, FMF
4400 Dauphine Street
New Orleans, LA 70146-5400

1000
FAC
02 Sep 10

From: Environmental Manager, Facilities, Marine Forces Reserve
To: Planning Director, Yakima County Public Services, Planning
Division, 128 North 2nd Street, Yakima, WA 98901

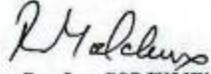
Subj: CONSTRUCTION PROJECTS AT YAKIMA TRAINING CENTER, WASHINGTON

1. The Marine Forces Reserve is preparing an Environmental Assessment (EA) of its proposal to construct a new Marine Corps Reserve Center (MCRC) for Marine Corps Reserve, Company B, 4th Tank Battalion at the Army Reserve National Guard (ARNG) Yakima Training Center (YTC) in Kittitas and Yakima Counties, Washington. The MCRC would include a combat vehicle maintenance facility and a training reserve center as well as ancillary facilities including vehicle holding sheds, tactical vehicle parking areas, wash racks, security and fences, gate, utilities, tank trail, and access road. The proposed location for the facilities is at the Yakima Training Center as illustrated on the attached map (Figure 1). The combat vehicle maintenance facility and training reserve center would occupy a one-story steel framed structure. Site preparation would include grubbing, clearing, and leveling the area for construction of the structure. The entire Proposed Action (including the construction of the reserve training center, the combat vehicle maintenance facility, and associated ancillary facilities) would occur within Site C, an undeveloped 12.5 acre parcel north of the intersection of Wilson and Tipp Roads in the southern portion of the YTC (Figure 2).

2 Marine Corps Order P5090.2A sets forth the Marine Corps' regulations implementing the National Environmental Policy Act. MCO P5090.2A requires the Marine Corps to consider "present or reasonably foreseeable future actions with the potential, together with the proposed action, to cause cumulative environmental impacts". Due to the fact that the Proposed Action would be located on an existing Army installation and would not introduce new land uses that are inconsistent with the YTC's surroundings, we would not expect the Proposed Action to contribute to permanent cumulative impacts on environmental resources outside the boundaries of the YTC. We envision that the Proposed Action's potential impacts outside the boundaries of the YTC would be limited to short term effects on traffic and emissions associated with construction of the MCRC. We respectfully request that your office inform us of any projects currently planned within Yakima County that would also have the potential for similar impacts in the vicinity of the YTC within 30 days.

Subj: CONSTRUCTION PROJECTS AT YAKIMA TRAINING CENTER, WASHINGTON

3. Point of contact for this matter is Richard Godchaux at 504-678-5067.


R. L. GODCHAUX

Copy To:
File



UNITED STATES MARINE CORPS
Marine Forces Reserve, FMF
4400 Dauphine Street
New Orleans, LA 70146-5400

1000
FAC
02 Sep 10

From: Environmental Manager, Facilities, Marine Forces Reserve
To: Dan Valoff, Kittitas County Community Development Services, 411 N
Ruby St, Suite 2, Ellensburg, WA 98926.

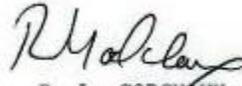
Subj: CONSTRUCTION PROJECTS AT YAKIMA TRAINING CENTER, WASHINGTON

1. The Marine Forces Reserve is preparing an Environmental Assessment (EA) of its proposal to construct a new Marine Corps Reserve Center (MCRC) for Marine Corps Reserve, Company B, 4th Tank Battalion at the Army Reserve National Guard (ARNG) Yakima Training Center (YTC) in Kittitas and Yakima Counties, Washington. The MCRC would include a combat vehicle maintenance facility and a training reserve center as well as ancillary facilities including vehicle holding sheds, tactical vehicle parking areas, wash racks, security and fences, gate, utilities, tank trail, and access road. The proposed location for the facilities is at the Yakima Training Center as illustrated on the attached map (Figure 1). The combat vehicle maintenance facility and training reserve center would occupy a one-story steel framed structure. Site preparation would include grubbing, clearing, and leveling the area for construction of the structure. The entire Proposed Action (including the reserve training center, the combat vehicle maintenance facility, and associated ancillary facilities) would be located at Site C, an undeveloped 12.5 acre parcel north of the intersection of Wilson and Tipp Roads in the southern portion of the YTC (Figure 2).

2. Marine Corps Order P5090.2A sets forth the Marine Corps' regulations implementing the National Environmental Policy Act. MCO P5090.2A requires the Marine Corps to consider "present or reasonably foreseeable future actions with the potential, together with the proposed action, to cause cumulative environmental impacts". Due to the fact that the Proposed Action would be located on an existing Army installation and would not introduce new land uses that are inconsistent with the Project's sites surroundings, we would not expect the Proposed Action to contribute to permanent cumulative impacts on environmental resources outside the boundaries of the YTC. We envision that the Proposed Action's potential impact outside the boundaries of the YTC would be limited to short term effects on traffic and emissions associated with construction of the MCRC. We respectfully request that your office inform us of any projects currently planned within Kittitas County that would also have the potential for similar impacts in the vicinity of the YTC within 30 days.

Subj: CONSTRUCTION PROJECTS AT YAKIMA TRAINING CENTER, WASHINGTON

3. Point of contact for this matter is Richard Godchaux at 504-678-5067.


R. L. GODCHAUX

Copy To:
File



UNITED STATES MARINE CORPS
Marine Forces Reserve, FMF
4400 Dauphine Street
New Orleans, LA 70146-5400

1000
FAC
15 Feb 11

From: Deputy AC/S Facilities, Marine Forces Reserve
To: Mr. Harry Smiskin, Chairman, Yakama Nation Tribal Council, Yakama
Indian Nation, PO Box 151, Toppenish, WA 98948

Subj: Tribal Consultation, Yakima, Washington

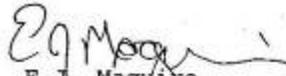
1. The Marine Forces Reserves (MFR) has prepared the attached Preliminary Final Environmental Assessment (EA) for its proposal to construct a new Marine Corps Reserve Center (MCRC) at Joint Base Lewis-McChord (JBLM) Yakima Training Center (YTC) in Yakima, Washington. The MCRC would include a combat vehicle maintenance facility and a training reserve center as well as ancillary facilities including vehicle holding sheds, tactical vehicle parking areas, wash racks, security and fences, gate, utilities, tank trail, and access road. The proposed location for the facilities is entirely within the Cantonment Area of YTC (see Figures 1-1, 1-2, and 1-3 in the attached Preliminary Final EA). The combat vehicle maintenance facility and training reserve center would occupy a one-story steel framed structure. Site preparation would include grubbing, clearing, and leveling the area for construction of the structure. The entire proposed project (including the reserve training center, the combat vehicle maintenance facility, and associated ancillary facilities) would be located on two acres of Site C, an undeveloped but previously disturbed 12.5 acre parcel north of the intersection of Wilson and Tipp Roads in the southern portion of YTC.

2. Marine Corps Order (MCO) P5090.2A sets forth the Marine Corps' regulations for implementing the National Environmental Policy Act. MCO P5090.2A and Section 106 of the National Historic Preservation Act require the Marine Corps to consider the impacts of the Proposed Action on cultural resources. The YTC Integrated Cultural Resources Management Plan (ICRMP) 2008-12 lists no tribal resources within the Area of Potential Effect (APE) of the proposed MCRC Site.

3. Based upon this information, the Preliminary Final EA concludes that the Proposed Action will have no affect on any sites associated with tribal use or practices. The MFR hereby requests that you provide any comments on this determination within 45 days of receipt of this letter.

4. The point of contact for this matter with the MFR is Richard Godchaux at 504-678-5067, or with our consultant (ERM), David Blaha, at 410-991-6894.

Subj: Tribal Consultation, Yakima, Washington


E.J. Maguire
Deputy AC/S Facilities

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UNITED STATES MARINE CORPS
Marine Forces Reserve, FMF
4400 Dauphine Street
New Orleans, LA 70146-5400

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FAC
15 Feb 11

From: Deputy AC/S Facilities, Marine Forces Reserve
To: Mrs. Jessica Gonzales, Supervisor, ATTN: Mr. Jeff Krupka,
US Fish and Wildlife Service, Central Washington Field Office,
214 Melody Lane, Wenatchee, WA 98801

Subj: Section 7 Consultation, Yakima, Washington

1. The Marine Forces Reserves (MFR) has prepared the attached Preliminary Final Environmental Assessment (EA) for its proposal to construct a new Marine Corps Reserve Center (MCRC) at Joint Base Lewis-McChord (JBLM) Yakima Training Center (YTC) in Yakima, Washington. The MCRC would include a combat vehicle maintenance facility and a training reserve center as well as ancillary facilities including vehicle holding sheds, tactical vehicle parking areas, wash racks, security and fences, gate, utilities, tank trail, and access road. The proposed location for the facilities is totally within the Cantonment Area of YTC (see Figures 1-1, 1-2, and 1-3 in the attached Preliminary Final EA). The combat vehicle maintenance facility and training reserve center would occupy a one-story steel framed structure. Site preparation would include grubbing, clearing, and leveling the area for construction of the structure. The entire proposed project (including the reserve training center, the combat vehicle maintenance facility, and associated ancillary facilities) would be located on two acres of Site C, an undeveloped but previously disturbed 12.5 acre parcel north of the intersection of Wilson and Tipp Roads in the southern portion of YTC.

2. In 2007, the US Army Corps of Engineers issued an EA and Finding of No Significant Impact for Base Realignment and Closure actions at YTC. In 2010, the Army issued an Environmental Impact Statement for Grow The Army actions at JBLM and YTC. Based on review of these documents, MFR concluded that although Federally- and state-listed plant and animal species are known to exist at YTC, the portion of the Cantonment Area that would be affected by the proposed MCRC does not constitute suitable habitat for these species, and the Proposed Action for the MCRC would not affect listed species. A field inspection of the MCRC site conducted on 25 May 2010 found no Federally- or state-listed species, although one Townsend's ground squirrel (*Spermophilus townsendii*), a federal species of concern and a Washington state candidate species, was observed.

3. Marine Corps Order (MCO) P5090.2A sets forth the Marine Corps' regulations for implementing the National Environmental Policy Act. MCO P5090.2A requires the Marine Corps to comply with the Federal Endangered Species Act, which directs federal agencies to carry out programs to conserve Federally-listed endangered and threatened plants and wildlife. Development and implementation of these programs must be carried out with the consultation and assistance of the Departments of the Interior (DOI) and Commerce. Based upon MFR's review of previous studies referenced

Subj: Section 7 Consultation, Yakima, Washington

above, and particularly based on the May 2010 site visit, the Preliminary Final EA concludes that the Proposed Action will have no effect on any Federally-listed species or critical habitat. The MFR proposes to have a trained biologist on site during initial site preparation to ensure that any Townsend's ground squirrels that may be present are protected and relocated to other suitable habitat at YTC.

4. The MFR hereby requests that you provide concurrence with this determination of no effect, or the basis for any objection to that determination, within 45 days of receipt of this letter.

5. The point of contact for this matter with MFR is Richard Godchaux at 504-678-5067, or with our consultant (ERM), David Blaha, at 410-991-6894.


E.J. Maguire
Deputy AC/S Facilities

Copy To:
File

Benjamin Sussman

From: Jeff_Krupka@fws.gov
Sent: Monday, April 11, 2011 3:26 PM
To: Benjamin Sussman
Subject: Re: EA for MCRC at Yakima Training Center

As we discussed on the phone today, the ESA does not provide a mechanism for us to concur with a "no effect" determination, but we see no reason to disagree with your findings. As a result, you did not receive a response from us regarding the proposed action. You can however consider this email as both a receipt of your February 15 consultation letter and that we have no objection to your determination. Thanks, jk

Jeff Krupka, Supervisory Fish and Wildlife Biologist
USFWS - Central Washington Field Office
215 Melody Lane, Suite 119
Wenatchee, WA 98801
509.665.3508 x18 (tel)
509.665.3509 (fax)
www.fws.gov/wafwo

"Most obstacles are imaginary, the rest are temporary" - the wisdom of Dusty's

▼ Benjamin Sussman <Benjamin.Sussman@erm.com>

Benjamin Sussman
<Benjamin.Sussman@erm.com>

04/11/2011 12:19 PM

To: jeff_krupka@fws.gov <jeff_krupka@fws.gov>
cc
Subject: EA for MCRC at Yakima Training Center

Mr. Krupka,

I am writing to follow up on our discussion today regarding the EA for a Marine Corps Reserve Center at JBLM-Yakima Training Center, and the "no effect" determination in USMC's 15 February consultation letter. Per our discussion, can you please confirm that USFWS has no objection to the "no effect" determination for this project?

Thank you very much,

Ben Sussman, AICP
Environmental Resources Management, Inc.
200 Harry S Truman Pkwy, Suite 400
Annapolis, MD 21401
410-266-0006
benjamin.sussman@erm.com
Please consider the environment before printing this e-mail.

4/13/2011



UNITED STATES MARINE CORPS
Marine Forces Reserve, FMF
4400 Dauphine Street
New Orleans, LA 70146-5400

1000
FAC
15 Feb 11

From: Deputy AC/S Facilities, Marine Forces Reserve
To: Mr. Rob Whitlam, State Archaeologist, Department of Archeology
and Historic Preservation, PO Box 48343, Olympia, WA 98504-8343

Subj: Section 106 Consultation, Yakima, Washington

1. The Marine Forces Reserves (MFR) has prepared the attached Preliminary Final Environmental Assessment (EA) for its proposal to construct a new Marine Corps Reserve Center (MCRC) at Joint Base Lewis-McChord (JBLM) Yakima Training Center (YTC) in Yakima, Washington. The MCRC would include a combat vehicle maintenance facility and a training reserve center as well as ancillary facilities including vehicle holding sheds, tactical vehicle parking areas, wash racks, security and fences, gate, utilities, tank trail, and access road. The proposed location for the facilities is entirely within the Cantonment Area of YTC (see Figures 1-1, 1-2, and 1-3 in the attached Preliminary Final EA). The combat vehicle maintenance facility and training reserve center would occupy a one-story steel framed structure. Site preparation would include grubbing, clearing, and leveling the area for construction of the structure. The entire proposed project (including the reserve training center, the combat vehicle maintenance facility, and associated ancillary facilities) would be located on two acres of Site C, an undeveloped but previously disturbed 12.5 acre parcel north of the intersection of Wilson and Tipp Roads in the southern portion of YTC.

2. Marine Corps Order (MCO) P5090.2A sets forth the Marine Corps' regulations for implementing the National Environmental Policy Act. MCO P5090.2A and Section 106 of the National Historic Preservation Act require the Marine Corps to consider the impacts of the Proposed Action on cultural resources. The YTC Integrated Cultural Resources Management Plan (ICRMP) 2008-12 lists no archeological, architectural, or other cultural resources within the Area of Potential Effect (APE) of the proposed MCRC Site.

3. Based upon this information, the Preliminary Final EA concludes that the Proposed Action will have no effect on any sites listed or eligible for listing in the National Register of Historic Places. The MFR hereby requests that you provide concurrence with this determination of no effect, or the basis for any objection to that determination, within 45 days of receipt of this letter.

4. The point of contact for this matter with the MFR is Richard Godchaux at 504-678-5067, or with our consultant (ERM), David Blaha, at 410-991-6894.

Subj: Section 106 Consultation, Yakima, Washington


E.J. Maguire
Deputy AC/S Facilities

Copy To:
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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

March 1, 2011

Colonel W. P. Davis
Marine Forces Reserve
4400 Dauphine Street
New Orleans, LA. 70146

Re: Marine Corps Reserve Center Project
Log No: 03011-06-USN

Dear Colonel Davis:

Thank you for contacting our department. We reviewed the materials you provided for the proposed Marine Corps Reserve Center Project at the Joint Base Lewis-McChord, Yakima Training Center, Yakima County, Washington.

We concur with your determination of No Historic Properties Affected.

We would appreciate receiving any correspondence or comments from concerned tribes or other parties that you receive as you consult under the requirements of 36CFR800.4(a)(4).

These comments are based on the information available at the time of this review and on the behalf of the State Historic Preservation Officer in conformance with Section 106 of the National Historic Preservation Act and its implementing regulations 36CFR800. Should additional information become available, our assessment may be revised.

In the event that archaeological or historic materials are discovered during project activities, work in the immediate vicinity must stop, the area secured, and the concerned tribes and this department notified. Thank you for the opportunity to comment and a copy of these comments should be included in subsequent environmental documents.

Sincerely,

A handwritten signature in blue ink, appearing to read "R. Whitlam".

Robert G. Whitlam, Ph.D.
State Archaeologist
(360) 586-3080
email: rob.whitlam@dahp.wa.gov





UNITED STATES MARINE CORPS
Marine Forces Reserve, FMF
4400 Dauphine Street
New Orleans, LA 70146-5400

1000
FAC
15 Feb 11

From: Deputy AC/S Facilities, Marine Forces Reserve
To: Mr. Rex Buck, Wanapum Leader, Wanapum Village, PO Box 275,
Beverly, WA 99321

Subj: Wanapum Tribal Consultation, Yakima, Washington

1. The Marine Forces Reserves (MFR) has prepared the attached Preliminary Final Environmental Assessment (EA) for its proposal to construct a new Marine Corps Reserve Center (MCRC) at Joint Base Lewis-McChord (JBLM) Yakima Training Center (YTC) in Yakima, Washington. The MCRC would include a combat vehicle maintenance facility and a training reserve center as well as ancillary facilities including vehicle holding sheds, tactical vehicle parking areas, wash racks, security and fences, gate, utilities, tank trail, and access road. The proposed location for the facilities is within the Cantonment Area of YTC (see Figures 1-1, 1-2, and 1-3 in the attached Preliminary Final EA). The combat vehicle maintenance facility and training reserve center would occupy a one-story steel framed structure. Site preparation would include grubbing, clearing, and leveling the area for construction of the structure. The entire proposed project (including the reserve training center, the combat vehicle maintenance facility, and associated ancillary facilities) would be located on two acres of Site C, an undeveloped but previously disturbed 12.5 acre parcel north of the intersection of Wilson and Tipp Roads in the southern portion of YTC.

2. MCO P5090.2A sets forth the Marine Corps' regulations for implementing the National Environmental Policy Act. MCO P5090.2A and Section 106 of the National Historic Preservation Act require the Marine Corps to consider the impacts of the Proposed Action on cultural resources. The YTC Integrated Cultural Resources Management Plan (ICRMP) 2008-12 lists no tribal resources within the Area of Potential Effect (APE) of the proposed MCRC Site.

3. Based upon this information, the Preliminary Final EA concludes that the Proposed Action will have no effect on any sites associated with tribal use or practices. The MFR hereby requests that you provide any comments on this determination within 45 days of receipt of this letter.

4. The point of contact for this matter with the MFR is Richard Godchaux at 504-678-5067, or with our consultant (ERM), David Blaha, at 410-991-6894.

Subj: Wanapum Tribal Consultation, Yakima, Washington


E.J. Maguire
Deputy AC/S Facilities

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APPENDIX B TRAFFIC CALCULATIONS

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**Yakima Training Center, Washington, Base Realignment and Closure (BRAC) Actions
Final Environmental Assessment**

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

Day	Oct 05		Nov 05		Dec 05		Jan 06		Feb 06		Mar 06		Apr 06	
	Count		Count		Count		Count		Count		Count		Count	
	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		
TOTAL:	2984	13725	2248	11943	2485	10084	1377	10160	2154	10530	2997	15026	2768	12622
	16709		14191		12569		11537		12684		18023		15390	

<p>Legend:</p> <p>1st Column is the Midshift count from 1800-0600 hrs 2nd Column is the Dayshift count from 0600-1800 hrs</p> <p>1st Column is the Midshift count from 1900-0700 hrs 2nd Column is the Dayshift count from 0700-1900 hrs</p>	<p>Dark Gray highlight = USAR Drill weekend</p> <p>Black highlight = ARNG Drill weekend</p> <p>Light Gray highlight = administrators only or no units</p>
---	---

**Yakima Training Center, Washington, Base Realignment and Closure (BRAC) Actions
Final Environmental Assessment**

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

Day	May 06		June 06		Jul 06		Aug 06		Sep 06		Oct 06	
	Count		Count		Count		Count		Count		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
TOTAL:	3218	13581	3698	12679	4689	14756	4026	11753	3784	9926	4401	12672
	16799		16377		19445		15779		13710		17073	

Legend:

1st Column is the Midshift count from 1800-0600 hrs	Dark Gray highlight = USAR Drill weekend
2nd Column is the Dayshift count from 0600-1800 hrs	Black highlight = ARNG Drill weekend
1st Column is the Midshift count from 1900-0700 hrs	Light Gray highlight = administrators only or no units
2nd Column is the Dayshift count from 0700-1900 hrs	

APPENDIX C MCRC SITE FIELD SURVEY REPORT

Site Survey Report: Marine Corp Reserve Center proposed sites
Date of survey: 1 June 2010
Observers: Wendy Mee, Brad Wilson, Kevin White, Jennifer Lannoye, Andrew Smith
Report Date: 22 June 2010
Authors: Wendy Mee

Summary:

A site survey of four adjacent proposed sites for a Marine Corp Reserve Center was conducted on 1 June 2010. The survey included a vegetation survey of all species present with a focus upon rare and sensitive species and those which could potentially be moved to another site prior to construction. No rare and sensitive plant species were known to occur within the proposed areas and none were located during the survey. Wildlife species were noted as well as the location of burrows potentially capable of supporting burrowing owls or Townsend's ground squirrels. Three survey stations for burrowing owls were established; however, no burrowing owls were detected. One Townsend ground squirrel was seen and eight potential burrow sites were recorded. The locations of basalt rocks which could potentially be moved to another site prior to construction were also noted. A history of disturbance to the sites was evident by the presence of weedy species, especially Russian knapweed (*Acroptilon repens*), a Class B noxious weed. A canal borders the eastern margins of two of the sites and wetland plants were recorded along those margins.

Methods:

The proposed construction sites, identified as sites C, D, E, and F, were mapped prior to the survey using a Geographic Information System (GIS) layer developed by Brad Wilson (Figure 1) from a hard copy map provided by the wildlife program manager (Colin Leingang). Known rare plant locations were previewed prior to the survey to determine if previously identified populations occurred within the proposed sites. The sites were not included in the 1999 YTC vegetation map given their location within the cantonment area.

Five observers walked the sites along parallel transects, spaced at approximately 50 meter intervals. Waypoints (WP) were recorded for native plants desirable for potential relocation, burrows, and basalt rocks for potential relocation using Garmin GPS units. Survey tracks were also recorded using the GPS units. Observed plant species and their distribution pattern and relative abundance were recorded in field notes as encountered. Observed wildlife species were also recorded in field notes.

Calling surveys are known to increase the probability of detecting burrowing owls. Burrowing owls were surveyed for at this site in conjunction with current historic burrow survey efforts by YTC staff. Calls were made using a (Cabelas model MO76) calling device. Survey methods included 1) initial passive listening and scanning each of the four cardinal directions for 5 minutes, 2) 15 seconds of calling in each

of the four cardinal directions, 3) 1 minute of listening, 4) 30 seconds of calling in each of the four cardinal direction, and 5) another minute of listening. Calling surveys were established and conducted at 3 locations around the perimeter of the site.

Results:

Preliminary analysis indicated that the sites had not been included in the 1999 YTC vegetation mapping effort and had not been surveyed for rare and sensitive plants prior to this effort. Located within the Cantonment area, sites C and E are bounded on two sides by roads and sites D and F are bounded by roads on one side and a canal on another side (Figure 1). The habitat type which best describes the site is that of Sparse big sagebrush/bunchgrass (ENRD 2002).

Tracks and recorded waypoints are presented in Figure 2, with waypoint descriptions and associated UTM locations presented in Table 1. Plant species encountered are listed in Table 2, including species USDA code, scientific and common names, distribution pattern, habitat type and relative abundance. Observed wildlife is listed in Table 3. Site photos are presented in Figure 3.

The survey began along the southern boundary of Site D. This site was described as a disturbed grassland with a low shrub component (<5%). Cheatgrass (*Bromus tectorum*) cover was relatively high with a uniform distribution pattern throughout. Forb cover was relatively low with a diversity of non-native weedy annuals present with a more random and patchy distribution. Russian knapweed was recorded throughout the site, with a relatively high cover. An irrigation canal runs along the eastern margin of the site and seepage from the canal is suspected of unnaturally supporting a number of wetland indicator species, primarily sedges and rushes along that margin.

The surveyors next surveyed Site F to the north of Site D. This site was very similar except for a higher cover by shrubs (roughly estimated at 5-15%). The distribution was patchy, with grey rabbitbrush (*Ericameria nauseosus*) the most common. The highest shrub density was located along the northern road boundary. Grass cover was high with cheat grass and Sandberg's bluegrass (*Poa secunda*) the most common species. A variety of wetland shrubs, grasses and forbs were located along the canal bounding the eastern margin of the site. Overall, forb cover and diversity was low. Patches of Russian knapweed were present throughout the site. One potential Townsend ground squirrel burrow site was recorded.

Site E was the third site surveyed and also had a patchy shrub component with the highest density occurring along the northern boundary. Grass cover was high with cheatgrass and Sandberg's bluegrass the most prevalent species. Blue bunch wheat grass (*Pseudoregneria spicata*) and needle & thread grass (*Hesperostipa comata*) were present with a more patchy distribution. Over all, forb cover and diversity was low, however patches of Russian knapweed were present throughout the site. The majority of potential Townsend ground squirrel burrows (4 locations) were recorded within this site.

Site C was the final site surveyed and had a composition similar to the previous sites. Shrub cover was low, the distribution sporadic and patchy, with grey rabbitbrush the most common species. One extensive patch of prickly pear cactus (*Opuntia polaycantha*) was recorded in the north-west corner of the site. Grass cover was high, predominately cheat grass and Sandberg's bluegrass with patches of

bluebunch and needle & thread grass. Overall, forb cover and diversity was low, however patches of knapweed were present throughout the site. Three potential Townsend ground squirrel burrow locations were recorded at this site.

Burrowing owl calling surveys were conducted on 1 June 2010 from 8:40 – 9:08 a.m. from three locations (Figure 2). Observers did not see or hear any burrowing owls or locate any new or historic burrows on the site.

Discussion/Recommendations:

All four sites show evidence of past disturbance. Construction on any one site will potentially further disturb the neighboring sites to some degree. No rare or sensitive plants were located at any of the sites and no burrowing owls were detected from three survey points. Given the sighting of one Townsend ground squirrel and the quantity of potential burrows recorded, it is recommended that a ground squirrel count and potential relocation effort be undertaken prior to any construction. The salvage of desirable native plants for relocation is recommended to occur either in the late fall or early spring prior to construction. Basalt rocks located on the site could be relocated at the same time.

The widespread distribution of Russian knapweed across all the sites is of concern. It is recommended that control measures be undertaken prior to construction to limit the potential for further spread of the noxious weed. Currently listed as a Class B noxious weed in Regions 5 and 6, containment of the weed is the primary goal at a state level, control is decided at the local level (Washington State Noxious Weed Control Board, 2010). The weed spreads aggressively both by seed and by root and all machinery should be thoroughly washed immediately after leaving the construction area.

References:

ENRD. 2002. Upland Plant Communities Occurring on Yakima Training Center. Yakima Training Center, Environmental and Natural Resource Division. Yakima, Wa.

Washington State Noxious Weed Control Board. 2010. Class B weeds. Russian knapweed.
http://www.nwcb.wa.gov/weed_list/Class_B_weeds.htm

APPENDIX D AIR EMISSIONS CALCULATIONS

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Activity Summary for the Proposed Action: JBLM Yakima Training Center, Yakima, Washington

Source	Type	Area SF	Proposed Year
1. Construct new Marine Corps Reserve Center (MCRC) ¹	Building/Parking Lot Construction	70,504	2011
	Demolition	0	n/a

Notes:

1: The MCRC includes a steel structure building, a security fence, gate and ancillary facilities such as covered parking, wash rack, organic equipment storage shed, and battery charging station.

Criteria Pollutant Construction Emissions Summary for the Proposed Action: JBLM Yakima Training Center, Yakima, Washington

Emission Sources	Emission Estimates (tons)					
	NO _x	VOC	CO	SO ₂ ⁷	PM ₁₀	PM _{2.5}
Fugitive Dust from Surface Disturbance during Construction ¹	0	0	0	0	2.15	0.22
Fugitive VOCs from Building Interior Coatings ²	0	0.07	0	0	0	0
Fugitive VOCs from Parking Space Coatings ²	0	0.02	0	0	0	0
Combustion Emissions from Nonroad and Onroad Construction Equipment/Vehicle Use ^{3,4,5,6}	4.64	0.49	2.08	0.41	0.31	0.30
Combustion Emissions from Construction Worker Commute	0.28	0.28	2.73	0.004	0.03	0.02
Total	4.64	0.58	2.08	0.41	2.46	0.51

Notes:

1: Fugitive dust (PM₁₀) emissions from general construction operations were estimated using emission factors from the Western Regional Air Partnership (WRAP) Fugitive Dust Hand Book (WRAP 2006). The fugitive PM₁₀ emission factor assumes a 50% dust control measure (watering). Fugitive PM_{2.5} emissions from construction operations were estimated by multiplying fugitive PM₁₀ by a factor of 0.1 (WRAP 2006)

2: Fugitive VOCs from building interior coatings and parking space coatings were estimated based on the square footage of the area to be painted and emission factors for non-flat paint, primer, or alkyd/floor paint (0.83 lbs/gal or 100 g/l). The VOC emission factors were taken from "GS-11 Green Seal Standard for Paints and Coatings, Third Edition, January 1, 2010" (http://www.greenseal.org/certification/standards/GS-11_paints_and_coatings_standard.pdf).

3: Combustion emissions from nonroad construction equipment were estimated using USEPA methods described in "Exhaust and Crankcase Emission Factors for Nonroad Engine Modeling-Compression-Ignition", USEPA 2004 (EPA420-P-04-009). Emission factors were adjusted to account for Transient Adjustment Factor (TAF) and Deterioration Factor (DF). To account for the DF, It was assumed that 50% of the useful life of each equipment has been expended. Construction equipment type and size (hp) used in the calculations are based on typical construction equipment used in the construction of buildings. All construction equipment was conservatively assumed to have Tier 0 diesel engines (1988 to 2001 model year). Annual emissions were estimated by multiplying the emission factors (g/hp-hr) by equipment hp and total annual hours of operation.

4: Combustion emissions from onroad construction vehicles for Year 2011 were taken from California Air Resources Board's EMFAC 2007 (Version 2.3) Burden Model. Annual emissions were estimated by multiplying the emission factors (pounds per mile) by the total vehicle miles traveled (VMT) per year.

5: Emission factors of total hydrocarbons (THC) for nonroad sources were converted to volatile organic compounds (VOCs) by multiplying by a factor of 1.053 (Source: USEPA's Conversion Factors for Hydrocarbon Emission Components, EPA420-R-05-015, December 2005). Emission factors of reactive organic gases for onroad sources were assumed to be the same as VOCs.

6: PM_{2.5} emissions from nonroad combustion sources were estimated by multiplying PM₁₀ emissions by a factor of 0.97 (EPA420-P-04-009).

7: A diesel fuel sulfur of 2,500 ppm was assumed for SO₂ calculations for nonroad combustion sources.

Estimated Fugitive Emissions from the Proposed Action: JBLM Yakima Training Center, Yakima, Washington

Source	
1. Construct new Marine Corps Reserve Center (MCRC) ¹	
Total Building/Parking Lot, SF =	70,504
Demolition (Buildings), SF =	0
Total Construction and Demolition (+10%), SF =	77,554
Fugitive Dust (PM ₁₀ and PM _{2.5}) from Surface Disturbance during Construction	
Total Area +10% (SF) =	77,554
PM ₁₀ Emission Factor (tons per acre-month) ² =	0.11
Construction duration (months) =	11
Fugitive PM ₁₀ from surface disturbance during construction =	4,309 lbs. (2.15 tons)
Fugitive PM _{2.5} from surface disturbance during construction =	431 lbs. (0.22 tons)
Building Interior Coatings (VOCs)	
Building Surface Area (16 ft. high (avg) X sq root of floor area X 4 interior walls) =	16,994
VOC Emission Factor (lb. per gallon of paint) ⁴ =	0.83
Building Surface Area covered per gallon of paint (SF) =	300
Coats of paint applied (assume one primer and two finish) =	3
Derived VOC Emission Factor (lb. Per SF of bldg. surface area) =	0.00278
VOCs from building interior coatings =	142 lbs. (0.07 tons)
Parking Space Coatings (VOCs) ^{5,6}	
Approximate Square Footage per Parking Space (SF) =	10
VOC Emission Factor (lb. per gallon of paint) ⁴ =	0.83
Parking Space Surface Area covered per gallon of paint (SF) =	200
Total Parking Spaces =	1,000
VOCs from parking space coatings =	42 lbs. (0.02 tons)

Notes:

- 1: The MCRC includes a steel structure building, a security fence, gate and ancillary facilities such as covered parking, wash rack, organic equipment storage shed, and battery charging station.
- 2: Fugitive Dust (PM₁₀) Emission Factor for construction operations was taken from the Western Regional Air Partnership (WRAP) Fugitive Dust Hand Book (WRAP 2006). The PM₁₀ emission factor assumes a 50% dust control measure (watering)
- 3: Fugitive PM_{2.5} emissions from construction operations were estimated by multiplying fugitive PM₁₀ by a factor of 0.1 (WRAP 2006).
- 4: Fugitive VOC Emission Factor of 0.83 lb. per gallon of paint (100 grams/liter of paint) for non-flat topcoat/primer (interior coatings), or floor paint/alkyd paint (parking spaces) were taken from "GS-11 Green Seal Standard for Paints and Coatings, Third Edition, January 1, 2010" (http://www.greenseal.org/certification/standards/GS-11_paints_and_coatings_standard.pdf).
- 5: Emissions from painting parking spaces were based on a) an approximately 10 square feet per parking space (i.e., four-inch wide stripes, an average parking space of 9 feet wide by 18 feet long, and every two parking spaces share a common line); b) an alkyd paint with a VOC content of 0.83 pound per gallon; c) one gallon of paint covers 200 square feet; and d) a total of 1,000 parking spaces
- 6: The total of 1,000 parking spaces is based on approximately 500 permanent staff at YTC (USACE 2007) and an assumed additional 500 spaces for temporary staff, armored tanks, and visitors.

Estimated Construction Equipment Emissions from the Proposed Action: JBLM Yakima Training Center, Yakima, Washington

Construction Activity	Construction Year	Construction Type	Equipment/Vehicle Type	Source Type	Horse Power	Load Factor	Hours of Operation Per Year	VMT Per Year	Emission Factor (g/hp-hr)**						Emissions (tons per year)					
									NOx	VOC	CO	SO ₂	PM ₁₀	PM _{2.5}	NOx	VOC	CO	SO ₂	PM ₁₀	PM _{2.5}
Construct new Marine Corps Reserve Center (MCRC)*	2011	Building/ Parking Lot Construction	Scraper	Nonroad	250	0.59	160	NA	8.057	0.765	4.513	0.810	0.590	0.573	0.21	0.02	0.12	0.02	0.02	0.01
			Grader	Nonroad	200	0.59	160	NA	8.057	0.765	4.513	0.810	0.586	0.568	0.17	0.02	0.09	0.02	0.01	0.01
			Excavator	Nonroad	200	0.59	160	NA	8.057	0.765	4.513	0.810	0.586	0.568	0.17	0.02	0.09	0.02	0.01	0.01
			Dozer	Nonroad	200	0.59	160	NA	8.057	0.765	4.513	0.810	0.586	0.568	0.17	0.02	0.09	0.02	0.01	0.01
			Backhoe/Loader	Nonroad	200	0.21	1600	NA	9.329	1.669	7.581	0.805	0.938	0.910	0.69	0.12	0.56	0.06	0.07	0.07
			Concrete Mixer	Nonroad	10	0.43	1600	NA	10.120	1.608	5.463	0.897	1.216	1.179	0.08	0.01	0.04	0.01	0.01	0.01
			Crane	Nonroad	200	0.43	1600	NA	8.481	0.729	2.950	0.810	0.476	0.462	1.29	0.11	0.45	0.12	0.07	0.07
			Air Compressor	Nonroad	200	0.43	1600	NA	8.481	0.729	2.950	0.810	0.476	0.462	1.29	0.11	0.45	0.12	0.07	0.07
			Pavers	Nonroad	200	0.59	160	NA	8.057	0.765	4.513	0.810	0.586	0.568	0.17	0.02	0.09	0.02	0.01	0.01
			Rollers	Nonroad	110	0.59	160	NA	8.057	0.765	4.513	0.810	0.586	0.568	0.09	0.01	0.05	0.01	0.01	0.01
			Water Tanker (HHDDV)**	Onroad	NA	NA	NA	4400	0.035	0.0028	0.011	0.00004	0.0017	0.0014	0.08	0.01	0.02	0.00	0.00	0.00
			Dump Truck (HDDV)**	Onroad	NA	NA	NA	13200	0.019	0.0024	0.00003	0.00001	0.0007	0.0006	0.12	0.02	0.00	0.00	0.00	0.00
			Delivery Truck (HDDV)**	Onroad	NA	NA	NA	13200	0.019	0.0024	0.00003	0.00001	0.0007	0.0006	0.12	0.02	0.00	0.00	0.00	0.00
			Pick-Up Truck (LDDT)**	Onroad	NA	NA	NA	2200	0.0008	0.0009	0.0083	0.00001	0.0001	0.0001	0.00	0.00	0.01	0.00	0.00	0.00
															4.64	0.49	2.08	0.41	0.31	0.30
					Total construction equipment emissions (tons per year)							4.64	0.49	2.08	0.41	0.31	0.30			

Notes:
 * The MCRC includes a steel structure building, security fence, gate and ancillary facilities such as covered parking, wash rack, organic equipment storage shed, and battery charging station.
 ** Emission factor units for onroad vehicles in pounds per mile. HHDDV = Heavy-Heavy Duty Diesel Vehicle (gross vehicle weight >33,000 lbs); HDDV = Heavy Duty Diesel Vehicle (GVW between 8,500 and 33,000 lbs); LDDT = Light Duty Diesel Truck (GVW < 8,500 lbs); VMT = Vehicle Miles Traveled; NA = Not Applicable; and g/hp-hr = grams per horsepower-hour

Assumptions for Nonroad Sources:

- 1: Construction equipment type and size (hp) used in the calculations are based on typical construction equipment used in the construction of buildings and parking lots. All construction equipment were conservatively assumed to have Tier 0 diesel engines (1988 to 2001 model year)
- 2: The nonroad construction equipment associated with site preparation, utility trenching/excavating, and parking lot paving were assumed to operate 8 hrs/day, 5 days/week, for 4 weeks (160 hour/year). Other nonroad construction equipment associated with building construction was assumed to operate 8 hrs/day, 5 days/week for 40 weeks (1,600 hrs/year). Actual number of hours for some of the equipment may be lower.
- 3: Load factor for the nonroad construction equipment were taken from appendix A of "Median Life, Annual Activity, and Load Factor Values for Nonroad Engine Emissions Modeling", USEPA 2004 (EPA420-P-04-005).
- 4: Emissions of all criteria pollutant from nonroad sources were estimated using USEPA methods described in "Exhaust and Crankcase Emission Factors for Nonroad Engine Modeling-Compression-Ignition", USEPA 2004 (EPA420-P-04-009). Steady state emission factors in g/hp-hr were adjusted to account for Transient Adjustment Factor (TAF) and Deterioration Factor (DF). To account for the DF, It was assumed that 50% of the useful life of each equipment has been expended.
- 5: A diesel fuel sulfur of 2,500 ppm was assumed for SO2 calculations
- 6: PM2.5 emissions were estimated by multiplying PM10 emissions by a factor of 0.97 (EPA420-P-04-009)
- 7: Emission factors of total hydrocarbons (THC) for nonroad sources were converted to volatile organic compounds (VOCs) by multiplying by a factor of 1.053 (USEPA 2005)

Estimated Construction Equipment Emissions from the Proposed Action (Continued): Yakima Training Center, Yakima, Washington

Assumptions for Onroad Sources:

8: Water tankers were assumed to have 20 miles per day of operation, 5 days a week for 44 weeks (4,400 hrs/year).

9: Dump trucks and delivery trucks were each assumed to travel 20 miles per roundtrip, make 3 roundtrips per day, 5 days a week for 44 weeks (13,200 hrs/year)

10: Pick-up trucks would be used mainly by site foremen. Assumed two pick-up trucks traveling 5 miles around the construction site for a total of 10 miles per day, 5 days a week for 44 weeks (2,200 hrs/year).

11: Emission factors (pounds per mile) of all criteria pollutants from onroad sources for Year 2011 were taken from California Air Resources Board's EMFAC 2007 (Version 2.3) Burden Model. Annual emissions were estimated by multiplying the emission factors by the total VMT per year.

12: Emission factors of reactive organic gases for onroad sources were assumed to be the same as volatile organic compounds (VOCs)

Criteria Pollutant Operational Emissions Summary for the Proposed Action: JBLM Yakima Training Center, Yakima, WA

Emission Source/Type	Total Building Area (SF)	# of Boilers	Natural Gas Consumption (scf/sq.ft) ²	Emission Factor (lb/10 ⁶ scf) ³						Emissions (tons per year)					
				NOx	VOC	CO	SO ₂	PM ₁₀	PM _{2.5}	NOx	VOC	CO	SO ₂	PM ₁₀	PM _{2.5}
Uncontrolled Natural Gas Boiler for Space Heating (MCRC Building) ¹	70,504	2	55.5	100	5.5	80	0.6	7.6	7.6	0.39	0.02	0.31	0.002	0.03	0.03

Notes:

1: The MCRC includes a steel structure building, a security fence, gate and ancillary facilities such as covered parking, wash rack, organic equipment storage shed, and battery charging station.

2: Estimated natural gas boiler consumption for commercial building space heating were taken from Energy Information Administration, Office of Energy Markets and End Use, Table C24 of the 2003 Commercial Buildings Energy Consumption Survey.

3: Emission factors for criteria pollutants from natural gas combustion were taken from US EPA AP-42, Compilation of Air Pollutant Emission Factors, Chapter 1.4