

FINAL
FINDING OF NO SIGNIFICANT IMPACT:
MAINTENANCE, REPAIR, AND OVERHAUL
TECHNOLOGY CENTER ACQUISITION
TINKER AIR FORCE BASE
OKLAHOMA CITY, OKLAHOMA

This Environmental Assessment (EA) has been prepared to evaluate the potential impacts on the natural and human environment associated with the acquisition, through purchase or long-term lease, of the Maintenance, Repair, and Overhaul Technology Center (MROTC) by the U.S. Air Force (USAF) at Tinker Air Force Base (AFB). This EA has been prepared pursuant to the Council on Environmental Quality's (CEQ's) regulations for implementing the procedural provisions of the National Environmental Policy Act (NEPA), codified at Title 40, Code of Federal Regulations Parts 1500 through 1508 (40 CFR 1500-1508), and Air Force Instruction (AFI) 32-7061, entitled *Environmental Impact Analysis Process* and codified at 32 CFR 989. This EA is incorporated by reference into this finding.

This document was prepared using data and information obtained in 2011. The document is currently recertified as the information collected during that time period is accurate and reflects the Proposed Action of acquiring the MROTC and validates that there are no significant impacts associated with the leasing action. As required, the document was not released to the public until after the approval of the Land Moratorium Waiver Request by the Under Secretary of Defense (AT&L) on 13 February 2013. The data within the EA was updated only to verify AMEC Solutions results and to include the public notification information. Originally, the lease was intended to be for 8 years but through negotiations was reduced to 7 years.

The MROTC is a 156,254-square-foot full-service aircraft modification facility comprising three hangars, an administrative area, and a 283,000-square-foot aircraft operations ramp situated on 52.98 acres adjacent to Tinker AFB. Through the Oklahoma City Air Logistics Center, the USAF rents 156,254 square feet of hangar space and administrative area and a 283,000-square-foot aircraft operations ramp at the MROTC under short-term service contracts with the facility's primary lessee, Boeing Company (Boeing). The use of this space allows the 76 Aircraft Maintenance Group (AMXG) to meet its current mission requirements.

Acquisition of the MROTC has been proposed to provide the 76 AMXG with the space and resources to meet its current and projected workload. The 76 AMXG conducts depot-level support operations on aircraft, aircraft engines, and component parts for the USAF, United States Navy, and US Air National Guard. The planned workload for the 76 AMXG is scheduled to increase, however, and the current short-term service contract with Boeing cannot be continued without a plan in place for either a long-term lease or purchase of the MROTC facility. The primary drivers of future workload are E-6 Service Life Extension Program modifications and B-1 Integrated Battle Systems modifications; existing on-base hangar facilities do not have the capacity to accommodate an increase in workload. Contracting the workload off base could potentially violate the *Limitations on*

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the Performance of Depot-Level Maintenance of Material as set forth in Title 10, United States Code Section 2466, which requires that at least 50 percent of depot-level core logistics maintenance and repair be performed at government-owned, government-operated U.S. Department of Defense facilities.

DESCRIPTION OF PROPOSED ACTION: The Proposed Action would involve the acquisition, through purchase or long-term lease, of the MROTC facility in order to secure workload capacity for the 76 AMXG aircraft maintenance and modifications. Such an acquisition would enable the USAF to meet current and programmed aircraft modification mission requirements. Implementation of the Proposed Action would enable Tinker AFB to utilize the MROTC for the long term and would provide sufficient space for the 76 AMXG to accommodate current and programmed workload as well as "surge" capacity for the 76 AMXG to manage fluctuations in workload.

IDENTIFIED ALTERNATIVES:

Alternatives to the Proposed Action have been considered and three were identified to be carried forward for further analysis, including the No-Action Alternative.

Description of Alternative 1: Under Alternative 1, the Preferred Alternative, the USAF would commence a long-term (eight-year) turnkey lease of the MROTC facility funded by military construction (MILCON) funds. The lease would allow for the continued use of the facility and would include the following services: security, fire and emergency, utilities, custodian, refuse collection, pest control, grounds maintenance, snow and ice removal, weather monitoring, aircraft grounding, and real property maintenance. Access would be provided 24 hours per day, seven days a week. This long-term lease would provide sufficient capacity for the 76 AMXG to manage its current and projected workload as well as "surge" fluctuations in workload.

Description of Alternative 2: Under Alternative 2, the USAF would purchase the MROTC outright from the owner, the Oklahoma Industries Authority, using MILCON funds. A short-term lease of the MROTC for approximately three to five years would be needed to allow the USAF time to secure the required funding. Upon purchase of the property, the responsibility for all services listed under Alternative 1 would transfer to Tinker AFB and would need to be fulfilled by base personnel or contractors.

Description of the No-Action Alternative: Under the No-Action Alternative, the USAF would not implement the Proposed Action and the 76 AMXG would continue to operate at maximum capacity for hangar space until the present short-term service contract expires. Upon expiration of the service contract, all services presently performed at the MROTC would be relocated to Tinker AFB to the extent possible, occupying portions of Building 2136 (B2136), B2122, B2121, B240, and B3001; the remaining workload would be contracted off base. Given the high volume of the current and projected workload for the 76 AMXG, this off-base contracting could result in violation of the *Limitations on the Performance of Depot-Level Maintenance of Material* as set forth in Title 10, United States Code Section 2466.

Although this alternative would not fulfill the purpose and need of the Proposed Action, it will be considered in this EA as required by the CEQ, which stipulates that the No-Action Alternative be evaluated as a baseline to assess environmental consequences that may occur if the Proposed Action is not implemented.

SUMMARY OF FINDINGS FOR ALTERNATIVE 1 (PREFERRED ALTERNATIVE)

Resource/Issue	Under Implementation of Alternative 1
Air Quality	Pollutant emissions associated with long-term lease of the MROTC would be limited to operational emissions. No construction, renovation, or demolition activities are proposed, and no new daily operations would be implemented, and the type and quantity of operating equipment (i.e., emergency generators, compressors) would not expected to increase; therefore, operational emissions are expected to remain below <i>de minimis</i> levels for air pollutants. The Preferred Alternative would have no impact on air quality.
Cultural Resources	The long-term lease of the MROTC would not involve ground-disturbing activities and would have no effect on any property listed or eligible for listing in the National Register of Historic Places. The Preferred Alternative would therefore have no impact on cultural resources.
Environmental Justice and Protection of Children	All impacts associated with the long-term lease of the MROTC would be confined to the project site and would not directly or indirectly impact minority populations or low-income populations that may live near Tinker AFB. Implementation of the Preferred Alternative would take place entirely within a controlled access area and would not extend to areas where children could be affected. The implementation of the Preferred Alternative would therefore have no impact on environmental justice or the protection of children.
Hazardous Materials and Wastes	The long-term lease of the MROTC would not change the use, generation, storage, or disposal of hazardous materials and wastes at the MROTC; currently, all such materials and wastes are used and disposed of in accordance with Tinker AFB hazardous materials and waste management protocols. Therefore, implementation of the Preferred Alternative would result in no impacts on or resulting from hazardous materials and waste storage at Tinker AFB or the MROTC.

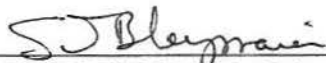
Resource/Issue	Under Implementation of Alternative 1
Land Use	The long-term lease of the MROTC would not change the land use designation of the MROTC or its surrounding land because operations at the MROTC would remain the same. Planned land use for off-base lands surrounding the MROTC include industrial, residential, undeveloped/agricultural, and open space land use. Tinker AFB land adjacent to the project area is planned as industrial, airfield, and aircraft operations and maintenance land use. Therefore, implementation of the Preferred Alternative would result in no impact on land use.
Safety	Under the long-term lease of the MROTC, operations at the facility would remain the same and there would be no change in the safety conditions at the MROTC or its operations. Aircraft are currently towed across Douglas Boulevard between the MROTC and Tinker AFB. Currently, first responders (e.g., police departments, fire departments, hospitals, medical centers) are informed in advance of any aircraft towing in order to minimize impacts on response routes. Implementation of the Proposed Alternative would result in no new impacts on safety.
Socioeconomics	The long-term lease of the MROTC would not result in any change to the number of job positions at the MROTC or Tinker AFB. Operations at the MROTC would remain the same as at present. The Preferred Alternative would not impact populations of the surrounding communities or result in a change in the local work force, and activities would remain compatible with current activities in area. Therefore, implementation of the Preferred Alternative would result in no impacts on the area's socioeconomic conditions.
Transportation and Circulation	The long-term lease of the MROTC would not change the operations or the number of personnel at the MROTC or at Tinker AFB; therefore, no change in traffic volume would occur as a result of the Preferred Alternative. There would be no impact on transportation or circulation at the MROTC or Tinker AFB.
Utilities and Infrastructure	The Preferred Alternative would not involve ground-disturbing activities at the MROTC or Tinker AFB. All utilities and solid waste collection and disposal would be included in the long-term lease, and Tinker AFB would not be responsible for procuring the utilities and services. There would be no impact on utilities or infrastructure at the MROTC as a result of this action.
Water Resources	The Preferred Alternative would not involve any ground-disturbing activities at the MROTC or Tinker AFB, and no operations at the MROTC would change under the Preferred Alternative. Although the 100-year floodplain for Soldier Creek lies in the northwestern portion of the MROTC property, no MROTC buildings or operations exist in the floodplain; this would not change under implementation of the Preferred Alternative. Therefore, there would be no impact on water resources.

CUMULATIVE IMPACTS: The cumulative impacts of implementing the Proposed Action along with other known past, present, and future projects were assessed in the EA, and no significant impacts were identified (EA Section 5).

PERMITS: Implementation of the Proposed Action would not require modification of current permits at Tinker AFB.

PUBLIC COMMENTS: A Notice of Availability for public review of the Draft EA was published in *The Daily Oklahoman* on 22 February 2013. The Draft EA was available for public review at the Midwest City Public Library. The public review period lasted until 8 March 2013, and no public comments were received; therefore, no comments were incorporated as part of the Final EA.

DECISION: Based upon my review of the facts and analysis contained in the EA, which is hereby incorporated by reference, I conclude that the Preferred Alternative will not have a significant impact on the natural or human environment. An environmental impact statement is not required for this action. This analysis fulfills the requirements of the NEPA, the President's CEQ, and 32 CFR 989.



STEVEN J. BLEYMAIER, Colonel, USAF
Commander

18 Apr 13

Date

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**U.S. AIR FORCE ENVIRONMENTAL
ASSESSMENT MAINTENANCE, REPAIR,
AND OVERHAUL
TECHNOLOGY CENTER ACQUISITION
TINKER AIR FORCE BASE, OKLAHOMA**



**United States Air Force
Air Force Materiel Command
Tinker Air Force Base, Oklahoma**

March 2013

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LIST OF ACRONYMS

§	section
°F	degrees Fahrenheit
ACOG	Association of Central Oklahoma Governments
ACS	American Community Survey
AFB	Air Force Base
AFI	Air Force Instruction
AMXG	Aircraft Maintenance Group
AP	accumulation point
APZ	accident potential zone
AST	aboveground storage tank
AT/FP	antiterrorism/force protection
AW	Air Wing
B	Building
BLS	US Bureau of Labor Statistics
BMP	best management practice
Boeing	The Boeing Company
BRAC	Base Realignment and Closure
CAA	Clean Air Act
CAAA	Clean Air Act Amendments
CEQ	Council on Environmental Quality
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFC	chlorofluorocarbon
CFR	Code of Federal Regulations
CH ₄	methane
CO	carbon monoxide
CO ₂	carbon dioxide
CO ₂ e	equivalent carbon dioxide
CZ	clear zone
DEQ	Oklahoma Department of Environmental Quality
DMRT	Depot Maintenance Review Team
DoD	United States Department of Defense
EA	Environmental Assessment
ECAMP	Environmental Compliance Assessment and Management Program
EFM	Extended Flow Maintenance
EIAP	Environmental Impact Analysis Process
EIS	Environmental Impact Statement
EO	Executive Order
EPA	US Environmental Protection Agency
ERP	Environmental Restoration Program

FY	fiscal year
GHG	greenhouse gas
HAP	hazardous air pollutant
HCFC	hydrochlorofluorocarbon
HFC	hydrofluorocarbon
HMMP	Hazardous Materials Management Program
HMMS	Hazardous Materials Management System
I-	Interstate
IAP	initial accumulation point
IBS	Integrated Battle Systems
ICRMP	Integrated Cultural Resources Management Plan
IICEP	Interagency and Intergovernmental Coordination for Environmental Planning
IRP	Installation Restoration Program
JP	jet propellant MILCON military construction
MLRA	major land resource area
MROTC	Maintenance, Repair, and Overhaul Technology Center
MXW	Aircraft Maintenance Wing
NAAQS	National Ambient Air Quality Standards
NEPA	National Environmental Policy Act
NESHAP	National Emission Standards for Hazardous Air Pollutants
NHPA	National Historic Preservation Act
N ₂ O	nitrous oxide
NO ₂	nitrogen dioxide
NO _x	nitrogen oxide
NRHP	National Register of Historic Places
NWI	National Wetland Inventory
OC-ALC	Oklahoma City Air Logistics Center
OCARTS	Oklahoma City Area Regional Transportation Study
OG&E	Oklahoma Gas and Electric Company
OWRB	Oklahoma Water Resources Board
PDM	Programmed Depot Maintenance
PF	pulverized fuel
PM _{2.5}	particulate matter equal to or less than 2.5 microns in diameter
PM ₁₀	particulate matter equal to or less than 10 microns in diameter
PSD	prevention of significant deterioration
PVC	polyvinyl chloride
R	refueler vehicles
RCRA	Resource Conservation and Recovery Act
SE	southeast
sf	square feet

SF ₆	sulfur hexafluoride
SIP	State Implementation Plan
SLEP	Service Life Extension Program
SO ₂	sulfur dioxide
SWPPP	Stormwater Pollution Prevention Plan
TACX	Tinker Aerospace Complex
tpy	tons per year
TSDf	treatment, storage or disposal facility
UDLM	Unprogrammed Depot Level Maintenance
US	United States
USACE	United States Army Corps of Engineers
USAF	United States Air Force
USC	United States Code
USFWS	United States Fish and Wildlife Service
UST	underground storage tank

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SECTION 1.0 OVERVIEW

1.1 Introduction

Aircraft maintenance and modification at Tinker Air Force Base (AFB) are performed on base at Buildings (B) 2136, B2122, B2121, B240, and B3001; however, due to on-base facilities constraints, the United States Air Force (USAF) needs additional space to efficiently and effectively perform required aircraft maintenance to meet mission requirements. To meet these requirements, the USAF currently rents 156,254 square feet (sf) of hangar space and administrative area and a 283,000-sf aircraft operations ramp at the Maintenance, Repair, and Overhaul Technology Center (MROTC).

1.1.1 Current Maintenance Requirements

Aircraft maintenance and modifications at Tinker AFB are conducted by personnel in the 76 Aircraft Maintenance Group (AMXG), one of five groups in the 76 Aircraft Maintenance Wing (MXW). The 76 AMXG comprises 2,600 military and civilian personnel that manage and conduct depot-level maintenance, repair, modification, overhaul, functional check flights, and reclamation of B-1, B-52, C/KC/EC-135, C-130, E-3, and E-6 aircraft (Tinker AFB 2010d). This group also conducts depot support operations on aircraft, aircraft engines, and component parts for the USAF, United States (US) Navy, and US Air National Guard (Tinker AFB 2010d).

The 76 AMXG currently utilizes aircraft hangar space at the MROTC to perform various aircraft modifications (see below). Approximately 15 aircraft per year receive modifications at facilities housed in the MROTC. These facilities operate on a two-shift schedule and employ 75 personnel to perform aircraft modification and related support functions. The aircraft maintained by the 76 AMXG are brought to Tinker AFB from various operating locations throughout the US and worldwide. Some aircraft are flown to Tinker AFB, while others are already housed at Tinker AFB for other operations. All aircraft taken to the MROTC must be defueled prior to being towed across Douglas Boulevard to the MROTC.

Aircraft modifications conducted at the MROTC include:

- *E-6 Milk Bottle Pin Replacement.* The E-6 milk bottle pin workload is the removal and replacement of the wing attachment pins (milk bottle pins) and bushings with associated inspection of the terminal fittings and attachment points. The workload consists of approximately one aircraft per year.
- *E-6 Service Life Extension Program (SLEP).* The SLEP is a preventative structural maintenance program to extend the E-6 aircraft's structural life, which is currently limited by structural fatigue. The workload consists of approximately four aircraft per year.

- *B-52 Fuel Hose Modification.* This workload involves changing the fuel hoses that could not be changed during the B-52 Programmed Depot Maintenance (PDM) due to supply problems. The workload consists of approximately five aircraft per year.
- *B-52 PDM Extended Flow Maintenance (EFM).* B-52 PDM EFM is routinely required on an unpredictable basis. EFM usually consists of major structural work, such as trunnion (pin) replacements and longeron (principal longitudinal structural component of the aircraft fuselage) repairs. The workload consists of approximately four aircraft per year.
- *B-1 Major Structural Repair I.* This workload is similar to the B-52 PDM EFM and consists of approximately one aircraft per year.
- *Unprogrammed Depot Level Maintenance (UDLM).* The 76 AMXG anticipates a variety of multiplatform UDLM requirements that would require extra dock space. UDLM workload may include items such as E-6 and E-3 trunnion replacement, E-3 Foreign Military Sales fuel tank wiring replacement, and B-1 dorsal longeron inspection and repair. Although these are unplanned and unscheduled events, the 76 AMXG can predict recurring UDLM workload based on prior experience.

In addition to the aircraft modifications listed above, small tasks (such as light paint stripping utilizing solvent in quantities of 1 quart or less) are conducted in the MROTC. Typical aircraft modifications at the MROTC vary in time required to complete and are detailed in Table 1-1.

Table 1-1. Existing Aircraft Modification Rates at MROTC

Aircraft Modification						
Duration	E-6 Milk Bottle Repairs	E-6 SLEP	B-52 Fuel Hose Modification	B-52 PDM EFM	B-1 Major Structural Repair	UDLM
Number per Year (approximate)	1	4	5	4	1	varies
Hours per Year (approximate)	1,648	112,000	6,145	varies	varies	varies

1.1.2 Locations of Maintenance and Modifications Facilities

Currently, the 76 AMXG is at maximum capacity for available aircraft hangar space at Tinker AFB; on-base facilities include B2136, B2122, B2121, B240, and B3001. To accommodate the current workload, the 76 AMXG rents hangar space at the MRTOC (Tinker AFB 2010a). Planned workload on aircraft maintenance and modifications is scheduled to increase from current workload; however, current facilities on base do not have capacity to accommodate existing workload, including the E-6 SLEP, E-6 milk bottle pin, B-52 fuel hose modification, B-52 PDM EFM, and UDLM. One new modification, the B-1 Integrated Battle Systems (IBS) modification, is anticipated to serve as a primary driver for programmed workload. The B-1 IBS modifications will upgrade several systems including the fault diagnostic

system, computer displays, and data link. The B-1 IBS and other increases in workload will result in a greater workload capacity deficiency.

1.1.3 Future Maintenance Requirements

Going forward, the USAF proposes to increase the workload for aircraft modifications by the 76 AMXG required to meet mission requirements. Acquisition of the MROTC, through purchase or long-term lease, has been proposed to secure workload capacity over the long term in order to accommodate existing and planned workload for aircraft modifications. Acquisition of the MROTC would secure the availability of hangar space for use by the 76 AMXG and would enable Tinker AFB to fully accommodate current and planned workload on base.

This Environmental Assessment (EA) addresses the potential impacts of the Proposed Action on the human and natural environment as required by the National Environmental Policy Act (NEPA) of 1969, as amended (Title 42, United States Code Sections 4321-4347 [42 USC §§4321-4347]), and in accordance with the Council on Environmental Quality (CEQ) regulations implementing the procedural provisions of NEPA (Title 40, Code of Federal Regulations Parts 1500-1508 [40 CFR 1500-1508]) and Air Force Instruction (AFI) 32-7061, entitled *Environmental Impact Analysis Process* (EIAP) (32 CFR 989).

1.2 Purpose and Need

The *purpose* of the Proposed Action is to provide secure infrastructure necessary to accommodate current and programmed increases in workload for the 76 AMXG aircraft modifications performed at Tinker AFB. Tinker AFB is a key USAF location for aircraft modification due to its unique industrial capacity and geographic centrality. Currently, the MROTC is utilized through short-term service contracts in order to accommodate the current workload of approximately 15 aircraft per year in the three existing hangars. More than 133,000 hours of aircraft modification are performed annually by the 76 AMXG at the MROTC. The USAF requires sufficient aircraft modification facilities to support both aging and continuously advancing aircraft systems.

The *need* for the Proposed Action is that the current 76 AMXG aircraft modifications and maintenance workload exceeds the capacity of existing Tinker AFB hangar space, and that Tinker AFB cannot accommodate the future 76 AMXG aircraft modifications and maintenance workload using existing facilities. The proposed acquisition of the MROTC would support the 76 AMXG mission by securing adequate facility space for both the current and programmed workload. On-base hangar facilities do not have the capacity to accommodate an increase in workload. Because facilities capable of accommodating the 76 AMXG workload are limited at Tinker AFB, the level of workload that could potentially be contracted off base may result in a violation of *Limitations on the Performance of Depot-Level Maintenance of Material* as described in 10 USC §2466. Under this regulation, at least 50 percent of core logistics depot-level maintenance and repair must be performed at government-owned, government-operated facilities of the US Department of Defense (DoD). Acquisition of additional hangar space at the

MROTC would enable Tinker AFB to organically accommodate programmed workload for aging aircraft and continuously evolving aircraft systems by retaining workload on base. Acquisition of the MROTC would also provide surge capacity for the 76 AMXG to accommodate variable workload and the flexibility to accommodate future workload generated by increasing legacy requirements.

1.3 Location, History and Current Mission

Tinker AFB is within the city limits of Oklahoma City, 5 miles east of downtown (Figure 1-1). The main portion of the base is bordered by Interstate 40 (I-40), Southeast (SE) 15th Street, and SE 29th Street on the north, Douglas Boulevard and Post Road on the east, SE 74th Street on the south, and Sooner Road on the west (Figure 1-2). Midwest City and Del City are located north and northwest of Tinker AFB, respectively.

Tinker AFB's largest organization is the Oklahoma City Air Logistics Center (OC-ALC). The OC-ALC is the largest of three air logistics centers in the Air Force Materiel Command and provides depot maintenance, product support, services, and supply chain management, as well as information support for 31 weapon systems, 10 commands, 93 USAF bases, and 46 foreign nations. The OC-ALC is the worldwide manager for a wide range of aircraft, engines, missiles, software, and avionics and accessories components.

Currently, Tinker AFB encompasses approximately 5,000 acres and contains an airfield and other facilities that support various associated units at the base (Figure 1-2) (Tinker AFB 2006). Tinker AFB provides specialized logistics support, management, maintenance, and distribution to defense weapons systems worldwide. Tinker AFB is divided into seven districts, each with specific land uses. The 72d Air Base Wing is the host command. Associated units located at the base include the 76 MXW, OC-ALC, the 552d Air Control Wing, the 507th Air Refueling Wing, the US Navy Command Strategic Communications Wing One, the 3rd Combat Communications Group, and the 38th Cyberspace Engineering Group. Approximately 27,000 personnel, plus additional visitors, access the base each day.

1.3.1 MROTC

The MROTC is located east of Tinker AFB and is bordered by Douglas Boulevard and Tinker AFB to the west, SE 59th Street to the south, Tinker AFB's Radiological Waste Disposal Site 4000 and Landfill No. 6 to the southeast, Mishak Cemetery to the east, an Army Reserve Center and a dirt-bike track to the north, with commercial and residential development farther north (Tinker AFB 2010b) (Figure 1-3).

The OC-ALC has been renting space (namely hangars, administrative areas, and aircraft ramp) at the MROTC since May 2009 through a short-term operations service contract with The Boeing Company (Boeing) (Tinker AFB 2010a). The owner of the property is Oklahoma Industries Authority. The MROTC covers 52.98 acres and includes 156,254 sf of hangar space and administrative area (three hangars and one common space building) and a 283,000-sf aircraft operations ramp.

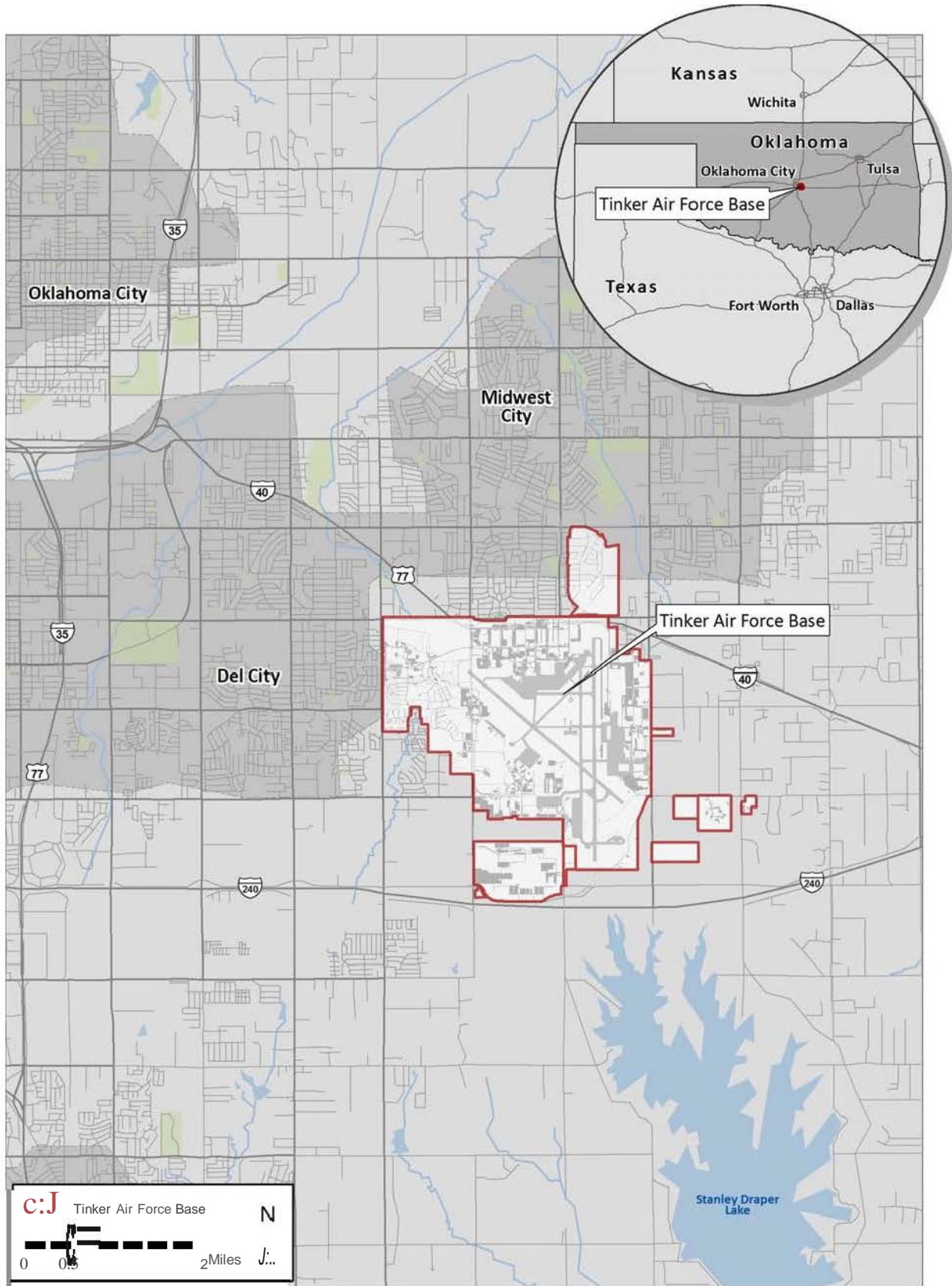


Figure 1-1. Regional Location Map

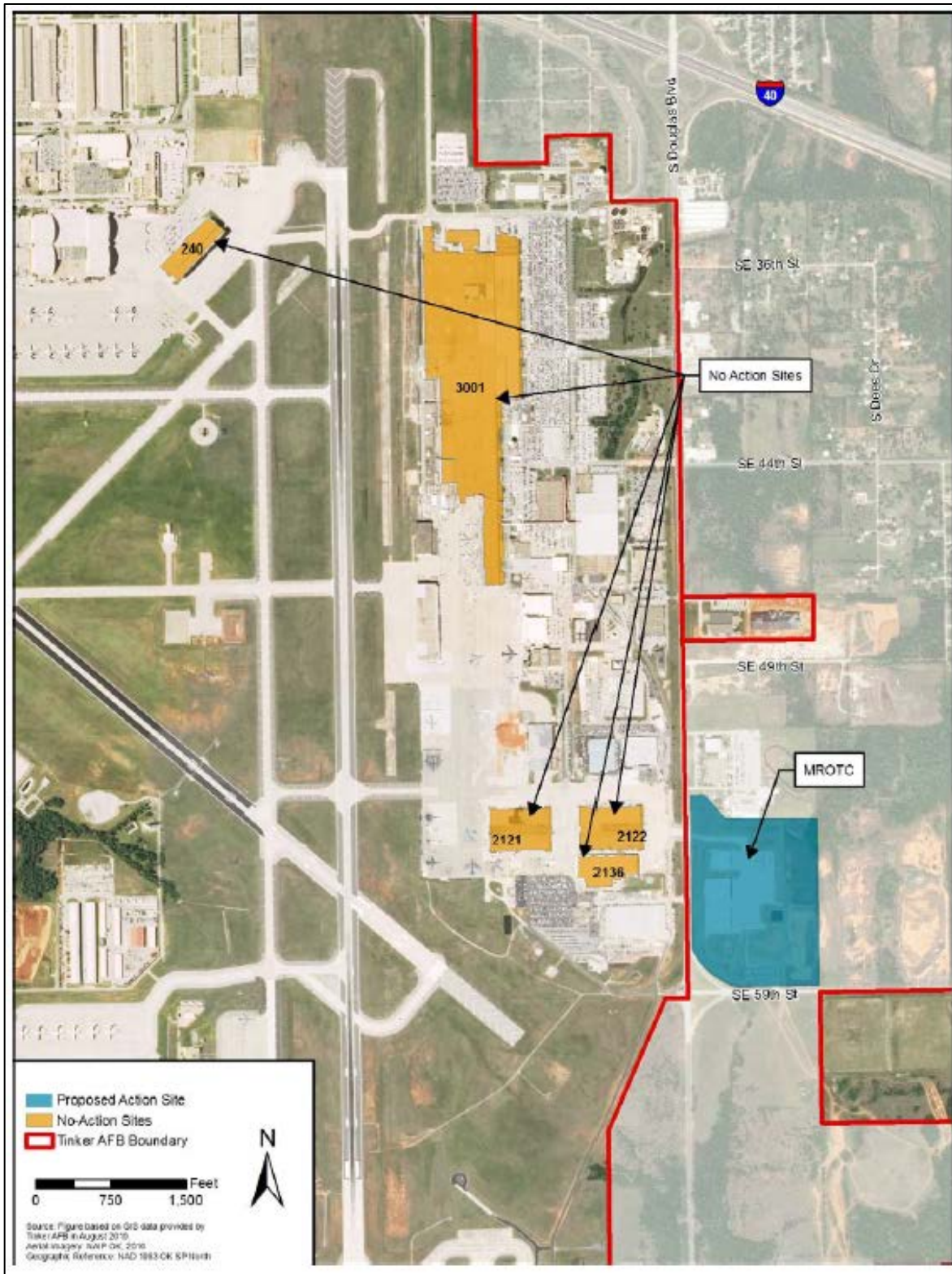


Figure 1-2. Current Tinker AFB Layout Map

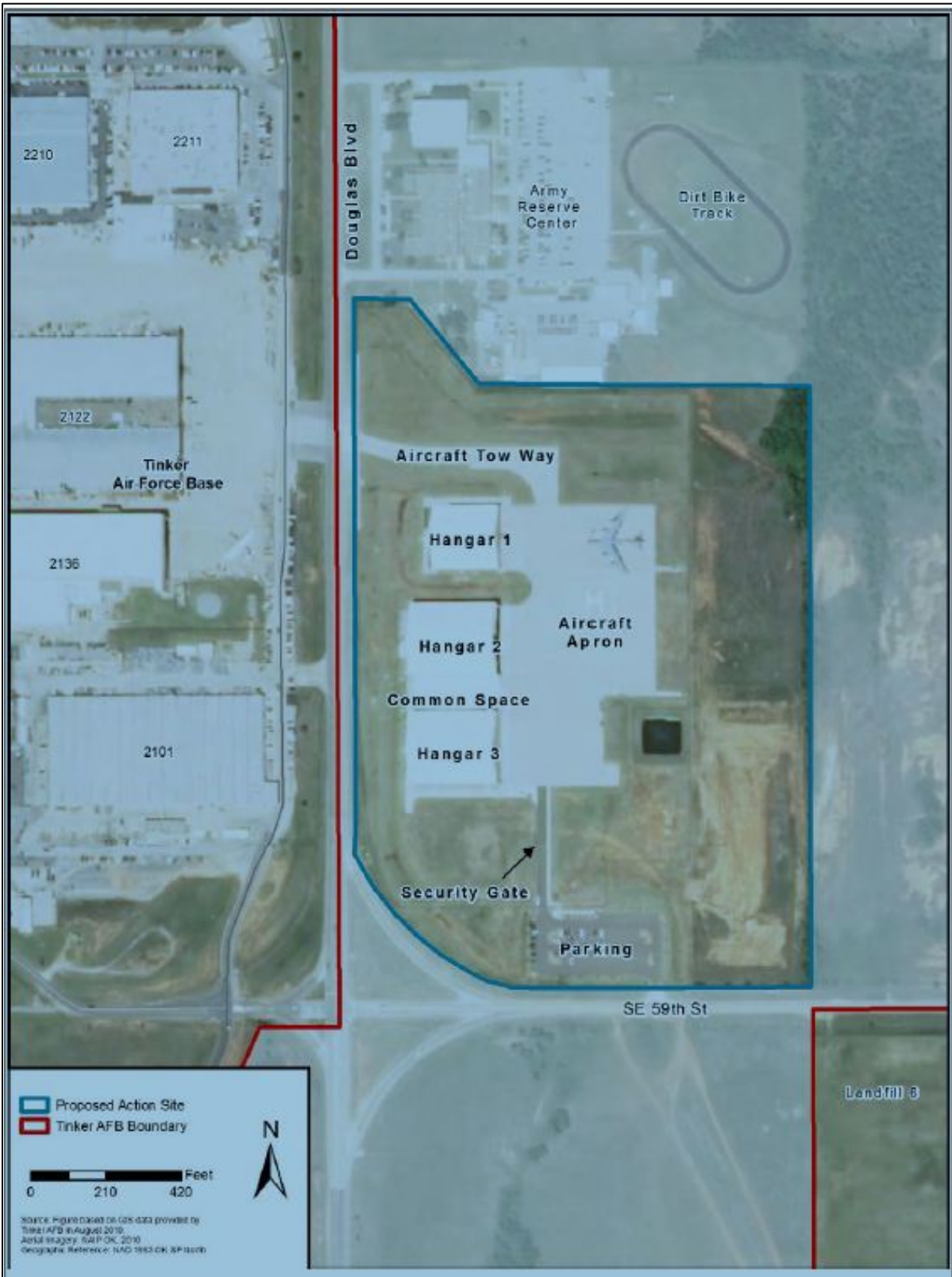


Figure 1-3. Current MROTC Layout Map

(Figure 1-3). All aircraft transported to the MROTC must be defueled prior to being towed across Douglas Boulevard to the MROTC. Parking for personnel is located on the southern side of the property; a separate secure gate/entry point is located in the northeast corner of the parking area. A storm shelter is located between Hangars 1 and 2 (Figure 1-3).

1.4 Summary of Environmental Study Requirements

The EIAP is the process by which federal agencies facilitate compliance with environmental regulations. NEPA is the primary legislation affecting these agencies' decision-making process. This act and other facets of the EIAP are described in the following sections.

1.4.1 National Environmental Policy Act

NEPA requires that federal agencies consider potential environmental consequences of proposed actions. The law's intent is to protect, restore, or enhance the environment through well-informed federal decisions. The CEQ was established under NEPA for the purpose of implementing and overseeing federal policies as they relate to this process. In 1978, the CEQ issued *Regulations for Implementing the Procedural Provisions of the National Environmental Policy Act* (40 CFR 1500-1508 [CEQ 1978]). The Air Force developed its own procedural regulations for implementing NEPA, entitled EIAP (AFI 32-7061, codified at 32 CFR 989). These regulations specify that an EA be prepared to accomplish the following:

- Briefly provide sufficient analysis and evidence for determining whether to prepare an Environmental Impact Statement (EIS) or a Finding of No Significant Impact
- Aid in an agency's compliance with NEPA when no EIS is necessary
- Facilitate preparation of an EIS when one is necessary

Further, to comply with other relevant environmental requirements (e.g., the Safe Drinking Water Act, Endangered Species Act, and National Historic Preservation Act) and to assess potential environmental impacts, the EIAP and decision-making process for a proposed action involves a thorough examination of all environmental issues pertinent to the action. The decision-making process includes a study of environmental issues related to the proposed construction and operations changes at Tinker AFB.

1.4.2 Scope of the Environmental Assessment

This EA considers the full breadth of potential environmental, cultural, and socioeconomic impacts associated with the Proposed Action. The geographic area addressed will include the Proposed Action site and immediately surrounding environs. In addition to the Proposed Action, the EA will assess potential impacts associated with reasonable alternatives to the Proposed Action and actions associated with the Proposed Action.

Resources analyzed will include the standard required critical elements of the human environment, as defined by NEPA, as well as additional issues identified by Tinker AFB staff and the USAF. The scope of analyses is based on the requirements of CEQ and the additional resources identified by Tinker AFB staff.

1.4.3 Interagency and Intergovernmental Coordination for Environmental Planning

Public involvement is a useful component of the EA process; it includes engagement of both agencies and members of the public. Public involvement occurs primarily during the public comment period. Interagency and Intergovernmental Coordination for Environmental Planning (IICEP) is a federally mandated process for informing and coordinating with other governmental agencies regarding proposed actions. As detailed in 40 CFR 1501.4(b), CEQ regulations require intergovernmental notifications prior to making any detailed statement of environmental impacts. Through the IICEP process (per AFI 32-7060, *Interagency and Intergovernmental Coordination for Environmental Planning*), the USAF notifies relevant federal, state, and local agencies and allows them sufficient time to make known their environmental concerns specific to a proposed action. Comments and concerns submitted by these agencies during the IICEP process are subsequently incorporated into the analysis of potential environmental impacts conducted as part of the EA.

For the Proposed Action under consideration, a draft EA will be issued and the document will be sent directly to identified agencies, a notice of availability will be published in *The Oklahoman*, and copies of the draft EA will be located at the Midwest City Library. Upon publication of the notice of availability and placement of the EA in the public library, the public comment period will commence. During the public comment period, all interested individuals will be able to request to view a copy of the draft EA at the selected library and will be able to submit written comments.

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SECTION 2.0 DESCRIPTION OF PROPOSED ACTION AND ALTERNATIVES

2.1 Introduction

The USAF has programmed an increase in workload for aircraft modifications by the 76 AMXG in order to meet mission requirements. Acquisition of the MROTC, through purchase or long-term lease, has been proposed to secure workload capacity over the long term in order to accommodate existing and planned workload for aircraft modifications. As required by NEPA, the potential impacts of the Proposed Action on the human and natural environment must be evaluated, and reasonable alternatives to the Proposed Action must be considered.

2.2 Proposed Action

The Proposed Action is to acquire the MROTC in order to secure workload capacity for the 76 AMXG aircraft maintenance and modification. Such an acquisition would enable the USAF to meet current and projected aircraft modification mission requirements. The MROTC is located east of Tinker AFB and is bordered by Douglas Boulevard on the west and SE 59th Street on the south (Figure 2-1). Implementation of the Proposed Action would enable Tinker AFB to utilize the MROTC for the long term and would provide sufficient space for the 76 AMXG to accommodate current and programmed workload. Specific annual aircraft maintenance workload for the 76 AMXG has not yet been defined; however, changes from current workload are anticipated. The primary drivers of future workload are E-6 SLEP modifications (four per year from fiscal year 2011 [FY11] through FY14) and B-1 IBS modifications (up to 12 per year beginning in FY12). E-6 SLEP modifications require approximately 28,000 hours per aircraft and B-1 IBS modifications require approximately 16,000 hours per aircraft; IBS modifications would require at least four hangar docks to accommodate workload. Future workload would also include modifications currently conducted (e.g., E-6 milk bottle pin, B-52 PDM EFM, UDLM). The proposed acquisition of facilities would accommodate all of the current and anticipated annual workload.

Aircraft modification activities currently utilize a two-shift operation (i.e., aircraft modifications are performed up to 16 hours per day, 252 days per year), and employ 75 personnel. Under the maximum projected workload, approximately 120 personnel would be required, an increase of 45 personnel from current operations. Projected workload could include up to 16 aircraft per year; however, maximum workload would likely fluctuate and could be determined in part by the number of aircraft received from the field for depot repair and maintenance. The method of transporting aircraft to the MROTC would remain as currently conducted: aircraft would be towed across Douglas Boulevard.

2.3 Alternatives Selection Criteria

The range of reasonable alternatives considered in this EA is limited to those alternatives that would satisfy the purpose and need for the Proposed Action as described in Section 1.2, *Purpose*

and Need. Existing aircraft modification facilities within Tinker AFB do not have the capacity to accommodate current and anticipated workload. Reasonable alternatives would fulfill the goal of providing aircraft modification facilities with the operational flexibility to accommodate current and anticipated aircraft modification workload. The range of reasonable alternatives must also meet essential technical, engineering, and economic threshold requirements to ensure that each alternative is environmentally sound, economically viable, and compliant with governing standards and regulations.

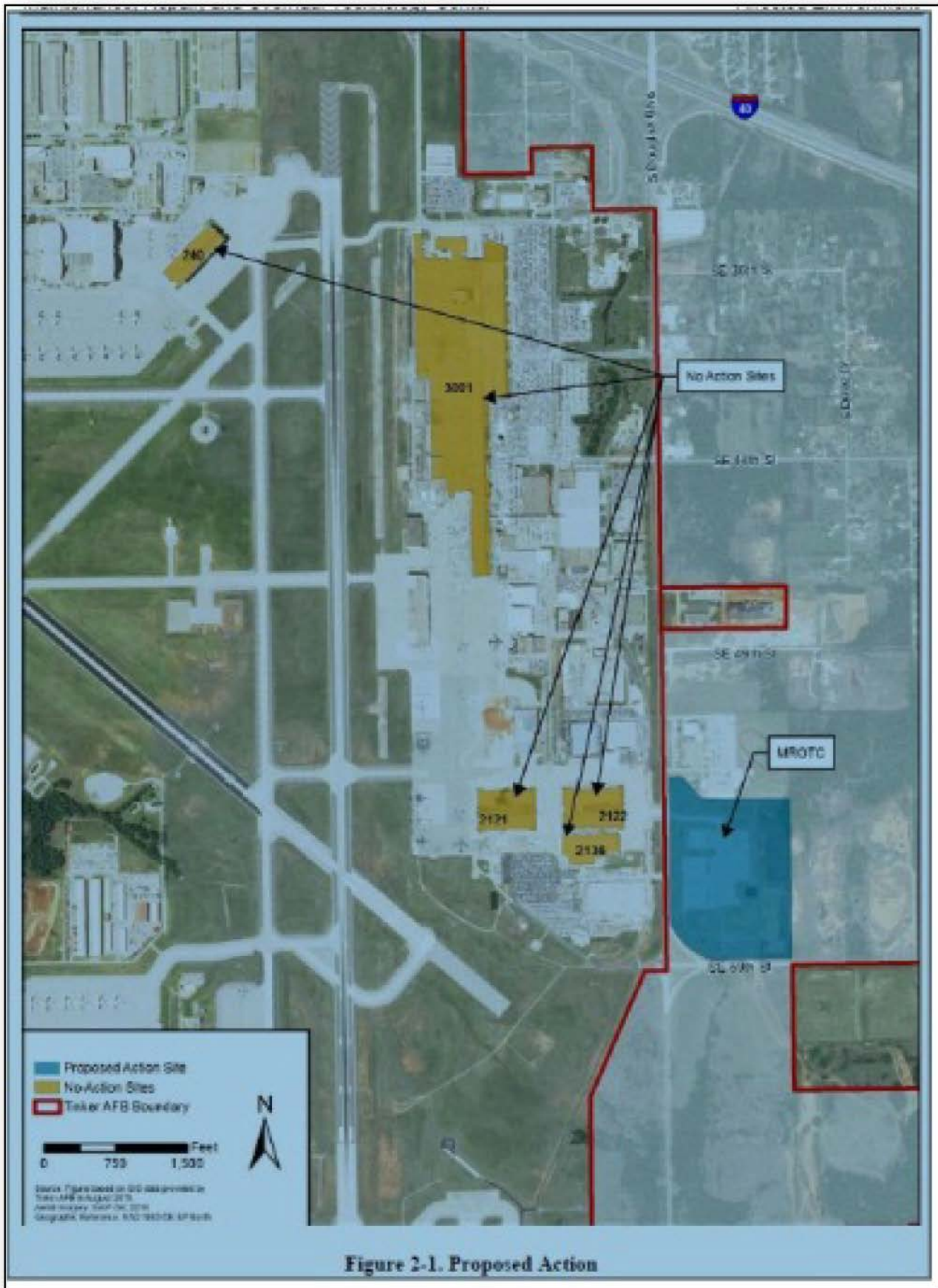
2.4 Alternatives

Alternative project approaches to implement the Proposed Action were identified and evaluated. Three alternatives were identified, including the No-Action Alternative (which is a required alternative under NEPA). Each alternative's adequacy for satisfying the project's objectives was evaluated, and a summary of those evaluations is provided below.

2.4.1 Alternative 1, Preferred Alternative: Commence Long-term Lease of the MROTC

Alternative 1, the Preferred Alternative, would commence a long-term (eight-year) lease of the MROTC hangars, administrative areas, and aircraft ramp from Boeing (Tinker AFB 2010a). The MROTC is a 156,254-sf full-service aircraft modification facility comprising three hangars, an administrative area, and a 283,000-sf aircraft operations ramp situated on 52.98 acres adjacent to Tinker AFB. According to a draft Economic Analysis report prepared by Tinker AFB (2010a), the lease would be a turnkey lease and military construction (MILCON) funds would be needed to commence a long-term lease of the MROTC property. This long-term lease would allow for the continued use of the MROTC and would include the following components:

- Security
- Fire and emergency services
- Utilities
- Custodial services
- Refuse collection
- Pest control
- Grounds maintenance
- Snow and ice removal
- Weather monitoring
- Aircraft grounding
- Real property maintenance
- Access 24 hours per day, seven days per week



Implementation of the Preferred Alternative would provide sufficient facility space for current and future aircraft maintenance and modification workload by the 76 AMXG. Long-term lease of the MROTC would also provide surge capacity for the 76 AMXG to accommodate variable workload and the flexibility to accommodate future workload generated by increasing legacy requirements.

2.4.2 Alternative 2: Purchase of MROTC

Under Alternative 2, Tinker AFB would purchase the MROTC property from the Oklahoma Industries Authority. MILCON funds would be needed to purchase the MROTC property; therefore, a short-term (approximately three- to five-year) lease of the facility to enable adequate time to secure such funding is included as a component of Alternative 2. This short-term lease would allow for the continued use of the MROTC until purchase of the property and would include the same components as listed in Alternative 1. Upon purchase of the property, responsibility for components listed above would transfer to Tinker AFB and would require fulfillment by Tinker AFB personnel or contractors.

2.4.3 Alternative 3: No-Action Alternative

Under the No-Action Alternative, the USAF would not implement the Proposed Action at Tinker AFB, and the 76 AMXG would continue to operate at maximum capacity for hangar space and would be unable to secure workload capacity to accommodate the programmed workload. The current short-term service contract cannot be continued for the long term without a plan in place for either a long-term lease or purchase of the MROTC facility. Therefore, upon expiration of the current short-term operations service contract, the 76 AMXG workload would be relocated to existing facilities on Tinker AFB (i.e., B2136, B2122, B2121, B240, and B3001) to the extent possible; the remaining workload would be contracted off base. Because facilities capable of accommodating the 76 AMXG workload are limited at Tinker AFB, the level of workload that would need to be contracted off base may result in a violation of *Limitations on the Performance of Depot-Level Maintenance of Material* as described in 10 USC §2466. Under this regulation, at least 50 percent of core logistics depot-level maintenance and repair must be performed at government-owned, government-operated facilities of the DoD. Further, no more than 50 percent of depot maintenance at each military department or defense agency (e.g., Tinker AFB) can be contracted. Due to the size of the current and projected 76 AMXG workload, and given the amount of depot-level workload currently contracted off base, contracting out a portion of the 76 AMXG workload would likely cause Tinker AFB to approach or exceed the 50 percent level of depot-level maintenance contracted off base.

Although this alternative would not fulfill the purpose and need of the Proposed Action, it will be carried forward as required by the CEQ. CEQ regulations for the implementation of NEPA stipulate that the No-Action Alternative must be considered to assess environmental consequences that may occur if the Proposed Action is not implemented.

2.5 Alternatives Considered but Not Carried Forward

Three additional alternatives considered but eliminated from further evaluation are detailed below.

Construction of New Facilities at Tinker AFB. An alternative was considered that consisted of constructing new facilities at Tinker AFB. Due to limited space available on base, demolition of some existing facilities would most likely be required to accommodate the size of new facilities. Construction near B2210 was considered; B2210 currently houses the constant speed drive shop and has been placed on the demolition list for Tinker AFB facilities. A MILCON funding request has already been submitted for that location for a corrosion control facility; therefore, it would not be available for construction of aircraft maintenance and modification facilities. No other on-base locations were identified as feasible sites to accommodate additional hangar space. Therefore, this alternative would not fulfill the purpose and need of the Proposed Action and was eliminated from further analysis.

Identify and Acquire a New Off-site Facility Alternative. Another alternative considered was to identify and acquire an off-site facility other than the MROTC. No other suitable off-site property acquisition alternatives were identified in the alternative identification and screening process. Therefore, this alternative would not fulfill the purpose and need of the Proposed Action and was eliminated from further analysis.

Redirect Workload to an Off-base Contractor Alternative. A third alternative considered was to send all workload that current on-base facilities cannot accommodate to an off-base contractor. This alternative would result in violation of *Limitations on the Performance of Depot-Level Maintenance of Material* (10 USC §2466); therefore, this alternative would not fulfill the purpose and need of the Proposed Action and was eliminated from further analysis.

2.6 Reasonably Foreseeable Concurrent Actions

Implementation of the Proposed Action and associated potential environmental impacts would occur concurrently with other projects and developments proposed on Tinker AFB in the vicinity of the MROTC. In addition to the Proposed Action, other projects occurring or planned on Tinker AFB within the next three years include the following:

- Henry Twaddle Facility Acquisition
- Large Engine Test Cell Construction
- Acquisition of the Tinker Aerospace Complex (TACX)
- St. Anthony Medical Center Construction
- Air Traffic Control Tower Construction
- T9 Test Cell Construction at the TACX
- Midwest Boulevard Gate Construction
- Defense Logistics Agency General Purpose Warehouse Construction

- Depot Maintenance Review Team (DMRT) Three-Bay Hangar Construction
- Steam Plant Decentralization

2.7 Summary of Potential Impacts

Potential impacts are evaluated and described in Section 4, *Environmental Consequences*. Table 2-2 provides a summary of the potential impacts for resource areas fully evaluated and associated with the Preferred Alternative, Alternative 2, and the No-Action Alternative. Table 2-3 provides a summary of resource areas that are not be evaluated further because no impacts on those resources would result from implementation of the Preferred Alternative, Alternative 2, or the No-Action Alternative.

Table 2-2. Summary of Impacts for Fully Evaluated Resources

Resource/Issue	Preferred Alternative	Alternative 2	No-Action Alternative
Air Quality	Pollutant emissions associated with long-term lease of the MROTC would be limited to operational emissions. No construction, renovation, or demolition activities are proposed, and no new daily operations would be implemented, and the type and quantity of operating equipment (i.e. emergency generators, compressors) is not expected to increase; therefore, operational emissions are expected to remain below <i>de minimis</i> levels for air pollutants. The Preferred Alternative would have no impacts on air quality.	Pollutant emissions associated with implementation of Alternative 2 would be similar to those for the Preferred Alternative. Alternative 2 would have no impacts on air quality.	The No-Action Alternative would result in the relocation of workload to existing facilities on Tinker AFB to the extent possible, with the remaining workload to be contracted off base. Until off-base sites are identified, a thorough evaluation of impacts and their significance to air quality cannot be completed for those sites.
Cultural Resources	The long-term lease of the MROTC would not involve ground-disturbing activities and would have no effect on any property listed or eligible for listing in the National Register of Historic Places (NRHP).	Alternative 2 would not involve ground-disturbing activities and would have no effect on any property listed or eligible for listing in the NRHP.	Relocation of workload to existing facilities on Tinker AFB could impact cultural resources if the relocation involved an historic building and/or would significantly alter character-defining features of the building as defined in the Integrated Cultural Resources Management Plan (ICRMP).

Table 2-2. Summary of Impacts for Fully Evaluated Resources (cont.)

Resource/Issue	Preferred Alternative	Alternative 2	No-Action Alternative
Environmental Justice and Protection of Children	All impacts associated with the long-term lease of the MROTC would be localized to the project site and would not directly or indirectly impact minority populations or low-income populations that may live within the vicinity of Tinker AFB. Implementation of the Preferred Alternative would occur entirely within a controlled access area and would not extend to areas where children could be affected.	Impacts associated with Alternative 2 would be similar to those associated with the Proposed Action and would not impact minority populations or low-income populations or areas where children could be affected.	The No-Action Alternative would involve the relocation of workload to existing facilities on Tinker AFB to the extent possible, with the remaining workload to be contracted off base. The relocation of portions of the workload off base could impact minority populations or low-income populations or areas where children might congregate.
Hazardous Materials and Wastes	The long-term lease of the MROTC would not result in a change in the use, generation, storage, or disposal of hazardous materials and wastes at the MROTC; currently, all such materials and wastes are utilized and incorporated in accordance with Tinker AFB hazardous materials and waste management protocols. Therefore, implementation of the Preferred Alternative would result in no impacts on or resulting from hazardous materials and waste storage at Tinker AFB or the MROTC.	Impacts associated with Alternative 2 would be similar to those associated with the Proposed Action and would result in no impacts on or resulting from hazardous materials and waste storage at Tinker AFB or the MROTC.	The No-Action Alternative would result in the relocation of workload to existing facilities on Tinker AFB to the extent possible, with the remaining workload to be contracted off base. The relocation of portions of the workload off base might require reconfiguration or relocation of hazardous materials and wastes storage and accumulation sites.

Table 2-2. Summary of Impacts for Fully Evaluated Resources (cont.)

Resource/Issue	Preferred Alternative	Alternative 2	No-Action Alternative
Land Use	The long-term lease of the MROTC would not result in any change in land use designation. Off-base lands surrounding the proposed project site are planned to include industrial, residential, undeveloped/agricultural, and open space land use. Tinker AFB land adjacent to the project area is planned as industrial, airfield, and aircraft operations and maintenance land use. Operations at the proposed project site would not change from current usage, and there would be no change in land use at the proposed project site. Therefore, implementation of the Preferred Alternative would cause no impacts on land use.	Impacts associated with Alternative 2 would be similar to those associated with the Proposed Action and would result in no impacts on or from land use.	The No-Action Alternative would result in the relocation of workload to existing facilities on Tinker AFB to the extent possible, with the remaining workload to be contracted off base. The relocation of workload might result in changes in land use or incompatible adjacent land use.
Safety	The long-term lease of the MROTC would result in no changes in operations at the MROTC; therefore, no change in existing safety conditions at the MROTC or relating to operations at the MROTC would occur, resulting in no impacts on safety.	Implementation of Alternative 2 would result in no changes in operations at the MROTC. However, fire and emergency response time could be increased because emergency vehicles would originate on-base and would have to navigate existing security gate configurations on Tinker AFB, which may result in longer response times than current emergency responders who originate from Oklahoma City Fire Department Station No. 113. There would be no impacts on safety concerns from fire detection or suppression systems, traffic safety, or site access.	The No-Action Alternative would result in the relocation of workload to existing facilities on Tinker AFB to the extent possible, with the remaining workload to be contracted off base. Relocation of workload to the No-Action Alternative sites on Tinker AFB could result in impacts to human health and safety if the sites were to be in conflict with clear zones (CZs), accident potential zones (APZs), or the runway. None of the No-Action Alternative sites are within these zones or the runway; however, all sites are along the airfield surface area. Until off-base sites are identified, a thorough evaluation of impacts and their significance to human health and safety cannot be completed for those sites.

Table 2-2. Summary of Impacts for Fully Evaluated Resources (cont.)

Resource/Issue	Preferred Alternative	Alternative 2	No-Action Alternative
Socioeconomics	<p>The long-term lease of the MROTC would not result in any change in the number of job positions at the MROTC or at Tinker AFB. Operations at the MROTC would not change from current operations. The Preferred Alternative would not impact populations of the surrounding communities or result in a change in the local work force, and activities would remain compatible with current activities in area. Therefore, implementation of the Preferred Alternative would result in no changes in socioeconomic conditions.</p>	<p>Similar to the Preferred Alternative, implementation of Alternative 2 would not result in a change in operations at the MROTC and would not impact populations of the surrounding communities. Therefore, implementation of Alternative 2 would result in no changes in socioeconomic conditions.</p>	<p>The No-Action Alternative would result in the relocation of workload to existing facilities on Tinker AFB to the extent possible, with the remaining workload to be contracted off base. Relocation of workload to the No-Action Alternative sites on Tinker AFB could result in temporary socioeconomic impacts if, during the relocation, operations are shut down and result in lost hours for hourly workers or furlough time for salary workers. Relocating a portion of the workload to off-base sites would introduce new jobs to the area, providing a beneficial impact to that area. The relocation of workload would relocate some jobs away from Tinker AFB. Therefore, relocation of workload to off-base site could result in negative impacts on socioeconomic conditions at Tinker AFB and provide beneficial impacts on socioeconomic conditions near the off-base site.</p>

Table 2-2. Summary of Impacts for Fully Evaluated Resources (cont.)

Resource/Issue	Preferred Alternative	Alternative 2	No-Action Alternative
Transportation and Circulation	The long-term lease of the MROTC would not result in any change in operations or the number of personnel at the MROTC or at Tinker AFB; therefore, no change in traffic volume would occur as a result of the Preferred Alternative and there would be no changes in transportation and circulation at the MROTC or Tinker AFB.	Actions included in Alternative 2 would not result in any change in operations or the number of personnel at the MROTC or at Tinker AFB; therefore, no change in traffic volume would occur from implementation of Alternative 2 and there would be no changes in transportation and circulation at the MROTC or Tinker AFB.	The No-Action Alternative would result in the relocation of workload to existing facilities on Tinker AFB to the extent possible, with the remaining workload to be contracted off base. Relocation of workload to on-base could improve existing traffic concerns by eliminating the need to tow aircraft across Douglas Boulevard; the No-Action Alternative sites are located in the aircraft operations and maintenance areas of Tinker AFB, adjacent to the airfield. Relocation of workload would require parking availability for relocated personnel to the No-Action Alternative sites. Relocation of workload to an off-base site could result in changes in traffic volume and flow in the vicinity of the site.
Utilities and Infrastructure	The Preferred Alternative includes Tinker AFB entering into a long-term lease of the MROTC; no ground-disturbing activities are proposed under this action. Under the conditions of the long-term lease, all utilities and solid waste collection and disposal are included in the lease, and Tinker AFB is not responsible for procuring the utilities and services. There would be no change in utilities and infrastructure at the MROTC as a result of this action.	Implementation of Alternative 2 includes the purchase of the MROTC by Tinker AFB; no ground-disturbing activities are proposed under this action. However, all utilities would become the responsibility of Tinker AFB; currently, utilities are included as part of the short-term operations service contract.	The No-Action Alternative would result in the relocation of workload to existing facilities on Tinker AFB to the extent possible, with the remaining workload to be contracted off base. Relocation of workload to an off-base site could result in changes in utility volume or infrastructure requirements for the site.

Table 2-2. Summary of Impacts for Fully Evaluated Resources (cont.)

Resource/Issue	Preferred Alternative	Alternative 2	No-Action Alternative
Water Resources	<p>The Preferred Alternative involves entering into a long-term lease of the MROTC and does not include any ground-disturbing activities. The 100-year floodplain for Soldier Creek occurs on the northwestern portion of the MROTC property; however, no buildings or operations at the MROTC occur on this portion of the site, and it would not change under implementation of the Preferred Alternative. Operations at the MROTC would not change under implementation of the Preferred Alternative. Therefore, there would be no changes in water resources.</p>	<p>Implementation of Alternative 2 includes the purchase of the MROTC by Tinker AFB; no ground-disturbing activities are proposed under this action. Impacts would be the same as described for the Preferred Alternative; therefore, there would be no changes in water resources.</p>	<p>The No-Action Alternative would result in the relocation of workload to existing facilities on Tinker AFB to the extent possible, with the remaining workload to be contracted off base. Relocation of workload to off-base sites could result in impacts on water resources if any ground-disturbing activities are required and water resources occur in the vicinity of the off-base sites.</p>

Table 2-3. Summary of No Impact for Resources not Evaluated Further

Resource/Issue	Preferred Alternative	Alternative 2	No-Action Alternative
Biological Resources	<p>The long-term lease of the MROTC would not involve any ground-disturbing activities. Therefore, impacts on or from biological resources would not result, and conditions would remain unchanged from existing conditions. No further biological resources analysis was performed. Grounds maintenance would become the responsibility of Tinker AFB; therefore, the MROTC would be included in updated versions of the Tinker AFB Integrated Natural Resources Management Plan.</p>	<p>Implementation of Alternative 2 would not involve any ground-disturbing activities. Therefore, impacts on or from biological resources would not result, and conditions would remain unchanged from existing conditions. No further biological resources analysis was performed. The MROTC would be included in updated versions of the Tinker AFB Integrated Natural Resources Management Plan (INRMP). Upon purchase of the MROTC, Tinker AFB would assume grounds maintenance and the wooded area in the western portion of the property would fall into the Urban Forestry portion of the INRMP. The Texas horned lizards are not known to occupy the area, but have been observed in areas south of the MROTC.</p>	<p>The No-Action Alternative would result in the relocation of workload to existing facilities on Tinker AFB to the extent possible, with the remaining workload to be contracted off base. Relocation of workload to the No-Action Alternative sites on and off Tinker AFB would not involve any ground-disturbing activities, and would have no impact on biological resources. Therefore, no further biological resources analysis was performed.</p>
Geology and Soils	<p>Implementation of the Preferred Alternative would not involve any ground-disturbing activities; therefore, impacts on or from geological resources would not result and conditions would remain unchanged from existing conditions. Therefore, no further geology and soils analysis was performed.</p>	<p>Implementation of Alternative 2 would not involve any ground-disturbing activities; therefore, impacts on or from geological resources would not result and conditions would remain unchanged from existing conditions. Therefore, no further geology and soils analysis was performed.</p>	<p>The No-Action Alternative would result in the relocation of workload to existing facilities on Tinker AFB to the extent possible, with the remaining workload to be contracted off base. Relocation of workload to the No-Action Alternative sites on and off Tinker AFB would not involve any ground-disturbing activities and would have no impact on geological resources. Therefore, no further geology and soils analysis was performed.</p>

Table 2-3. Summary of No Impact for Resources not Evaluated Further (cont.)

Resource/Issue	Preferred Alternative	Alternative 2	No-Action Alternative
Noise and Vibration	Implementation of the Preferred Alternative would not result in a change in long-term, operation-related noise because operations activities would remain the same as currently conducted within the MROTC. No fueled aircraft are present, and no engine run-ups would occur. Therefore, ambient noise and vibrations at Tinker AFB would remain relatively unchanged from existing conditions. No further noise and vibration analysis was performed.	For reasons similar to the Preferred Alternative, implementation of Alternative 2 would not result in noise and vibration impacts. Therefore, no further noise and vibration analysis was performed.	<p>The No-Action Alternative would result in the relocation of workload to existing facilities on Tinker AFB to the extent possible, with the remaining workload to be contracted off base. Relocation of workload to the No-Action Alternative sites on Tinker AFB would not result in a change in long-term, operation-related noise because operations activities would remain the same as currently conducted within Tinker AFB, and ambient noise and vibrations would remain relatively unchanged from existing conditions.</p> <p>Until the off-base sites are identified, a thorough evaluation of noise and vibration impacts and their significance cannot be completed for those sites. Therefore, no further noise and vibration analysis was performed.</p>
Sustainability	Implementation of the Preferred Alternative includes the long-term lease of the MROTC by Tinker AFB, but it does not include any modification of the existing facilities. Therefore, no further sustainability analysis was performed. Greenhouse gas (GHG) impacts are evaluated in Section 4.1 <i>Air Quality</i> .	Implementation of Alternative 2 includes the purchase of the MROTC by Tinker AFB, but it does not include any modification of the existing facilities. Therefore, no further sustainability analysis was performed. GHG impacts are evaluated in Section 4.1 <i>Air Quality</i> .	The No-Action Alternative would result in the relocation of workload to existing facilities on Tinker AFB to the extent possible, with the remaining workload to be contracted off base. The No-Action Alternative does not include any modifications of existing facilities. Therefore, no further sustainability analysis was performed. GHG impacts are evaluated in Section 4.1 <i>Air Quality</i> .

Table 2-3. Summary of No Impact for Resources not Evaluated Further (cont.)

Resource/Issue	Preferred Alternative	Alternative 2	No-Action Alternative
Visual Resources	Implementation of the Preferred Alternative includes the long-term lease of the MROTC by Tinker AFB, but it does not include any modification of the existing facilities. Given that the visual environment of Tinker AFB and at the location of the MROTC do not constitute a unique or sensitive viewshed, and the existing buildings are visually consistent with existing structures and activities at the installation and in the vicinity of the proposed project site, no impact on regional visual resources would occur; therefore, no further visual resources analysis was performed.	Implementation of Alternative 2 includes the purchase of the MROTC by Tinker AFB, but it does not include any modification of the existing facilities. Given that the visual environment of Tinker AFB and at the location of the MROTC do not constitute a unique or sensitive viewshed, and the existing buildings are visually consistent with existing structures and activities at the installation and in the vicinity of the proposed project site, no impact on regional visual resources would occur; therefore, no further visual resources analysis was performed.	The No-Action Alternative would result in the relocation of workload to existing facilities on Tinker AFB to the extent possible, with the remaining workload to be contracted off base. Relocation of workload to the No-Action Alternative sites on Tinker AFB would not include any modifications of existing facilities. Given that the visual environment of Tinker AFB does not constitute a unique or sensitive viewshed, no impacts on visual resources at Tinker AFB would occur. Until the off-base sites are identified, a thorough evaluation of impacts on visual resources and their significance cannot be completed for those sites. Therefore, no further visual resources analysis was performed.

Notes: CZ = clear zone, APZ = accident potential zone

SECTION 3.0 AFFECTED ENVIRONMENT

This section describes relevant existing environmental conditions for resources potentially affected by implementation of the Proposed Action. In compliance with NEPA, CEQ regulations, and 32 CFR 989, the description of the affected environment focuses on only those environmental resources potentially subject to impacts.

Due to the nature of the Proposed Action, the description of the affected environment is limited primarily to the MROTC, Tinker AFB, and surrounding areas within Oklahoma County. Resource areas that clearly would not be affected by the Proposed Action are omitted from discussion and include the following: biological resources, geology and soils, noise and vibration, sustainability, and visual resources. Resource descriptions focus on the following areas: air quality, cultural resources, environmental justice and protection of children, hazardous materials and wastes, land use, safety, socioeconomics, sustainability, and transportation and circulation.

3.1 Air Quality

3.1.1 Definition of Resource

Air quality in a given location is determined by the concentration of various pollutants in the atmosphere. National Ambient Air Quality Standards (NAAQS) are established by the US Environmental Protection Agency (EPA) under the Clean Air Act (CAA) for criteria pollutants, including ozone, carbon monoxide (CO), nitrogen dioxide (NO₂), sulfur dioxide (SO₂), particulate matter equal to or less than 10 microns in diameter (PM₁₀), particulate matter equal to or less than 2.5 microns in diameter (PM_{2.5}), and lead. The primary NAAQS set limits to protect public health, including sensitive populations such as children, the elderly, and individuals suffering from respiratory disease, with an adequate margin of safety. The secondary NAAQS set limits to protect public welfare, including protection against decreased visibility, damage to animals, crops, vegetation, and buildings.

Air quality management at USAF installations is established in AFI 32-7040, *Air Quality Compliance*. AFI 32-7040 requires installations to achieve and maintain compliance with all applicable federal, state, and local standards.

EO 13514, *Federal Leadership in Environmental Energy, and Economic Performance*, also introduced new greenhouse gas (GHG) emission management requirements for the Federal government. The EO requires agencies to establish reduction targets for GHG emissions as well as to develop an inventory of GHG emissions. The principal GHGs that enter the atmosphere because of human activities include carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), and fluorinated gases.

3.1.1.1 Criteria Pollutants

Air quality is affected by emissions from stationary sources (e.g., industrial development), fugitive sources (e.g., windblown dust), and mobile sources (e.g., motor vehicles). Air quality at a given location is a function of several factors, including the quantity and type of pollutants emitted locally and regionally and the dispersion rates of pollutants in the region. Factors affecting pollutant dispersion include wind speed, wind direction, atmospheric stability, temperature, the presence or absence of inversions, and topography.

Ozone. Ground-level (i.e., terrestrial) ozone is typically formed as a result of complex photochemical reactions in the atmosphere involving volatile organic compounds and nitrogen oxides (NO_x) in the presence of sunlight, mainly in the stratosphere. Ozone is a highly reactive gas that damages lung tissue, reduces lung function and sensitizes the lung to other irritants. Although stratospheric ozone shields the earth from damaging ultraviolet radiation, ground-level ozone is a highly damaging air pollutant and is the primary source of smog. As of March 2008, the EPA published a new standard for 8-hour ozone, revising the 1-hour NAAQS for ozone. The 8-hour standard is more protective of public health and more stringent than the 1-hour standard, and nonattainment areas for the 8-hour ozone standard have now been established. On 19 January 2010, the EPA published in the *Federal Register*, RIN 2060–AP98, Volume 75, Number 11, a proposed new rule revising the NAAQS for ground-level ozone. The commenting period regarding the proposed revisions to the ozone standard ended on 22 March 2010, and the EPA is obtaining additional data. The EPA is expected to set a final ozone standard by the end of July 2011.

Carbon Monoxide. CO is a colorless, odorless, poisonous gas produced by incomplete burning of carbon in fuel. The health threat from CO is most serious for those who suffer from cardiovascular disease, particularly those with angina and peripheral vascular disease.

Nitrogen Dioxide. NO₂ is a highly reactive gas that can irritate the lungs, cause bronchitis and pneumonia, and lower resistance to respiratory infections. Repeated exposure to high concentrations of NO₂ may cause acute respiratory disease in children. Because NO₂ is an important precursor in the formation of ozone, or smog, control of NO₂ emissions is an important component of overall pollution reduction strategies. The two primary sources of NO₂ in the United States are fuel combustion and transportation emissions. On 22 January 2010, the EPA strengthened the health-based NAAQS for NO₂. This action set a new 1-hour standard that defines the maximum allowable concentration observed in any monitoring area. The new NAAQS for NO₂ was published in the *Federal Register* on 9 February 2010 as RIN 2060–AO19, Volume 75, Number 26.

Sulfur Dioxide. SO₂ is emitted primarily from stationary source coal and oil combustion, steel mills, refineries, pulp and paper mills, and nonferrous smelters. High concentrations of SO₂ may aggravate existing respiratory and cardiovascular disease; asthmatics and those with emphysema or bronchitis are the most sensitive to SO₂ exposure. SO₂ also contributes to acid rain, which can lead to the acidification of lakes and streams and damage trees. On 2 June 2010, the EPA

strengthened the primary NAAQS for SO₂. The new NAAQS for SO₂ established a new 1-hour standard in order to protect the public from high short-term exposures to SO₂. Additionally, the EPA is revoking the existing annual and 24-hour standards due to insufficient evidence linking long-term exposure to SO₂ and health effects. The secondary SO₂ NAAQS 3-hour standard of 0.5 parts per million, established to protect the public welfare including effects on soil, water, visibility, wildlife, crops, vegetation, national monuments and buildings, will remain in effect, but the EPA is assessing the need for a change to the standard under a separate review.

Particulate Matter (PM₁₀ and PM_{2.5}). Particulate matter is a mixture of tiny particles that vary greatly in shape, size, and chemical composition and can be composed of metals, soot, soil, and dust. PM₁₀ includes large, coarse particles, whereas PM_{2.5} includes small, fine particles. Sources of coarse particles include crushing or grinding operations and dust from paved or unpaved roads. Sources of fine particles include all types of combustion activities (e.g., motor vehicles, power plants, wood burning) and certain industrial processes. Exposure to PM₁₀ and PM_{2.5} levels exceeding current standards can result in increased lung- and heart-related respiratory illnesses. The EPA has concluded that finer particles (less than 2.5 microns in diameter) are more likely to contribute to long-term health problems than particles greater than 10 microns in diameter, which typically result in short-term health problems.

Airborne Lead. Airborne lead can be inhaled directly or ingested indirectly by consuming lead-contaminated food, water, or nonfood materials such as dust or soil. Fetuses, infants and children are most sensitive to lead exposure, which has been identified as a factor in high blood pressure and heart disease. Exposure to lead has declined dramatically in the last few decades as a result of the reduction of lead in gasoline and paint, and the elimination of lead from soldered cans.

3.1.1.2 Greenhouse Gases

GHGs are measured by the global warming potential a given type of GHG may cause. The functionally equivalent amount or concentration of CO₂ is used as the reference for measuring global warming potential. Equivalent carbon dioxide (CO₂e) is a unit of measurement for describing GHG concentration. The principal GHGs that enter the atmosphere because of human activities are described below.

Carbon Dioxide. CO₂ is a GHG that enters the atmosphere through the burning of fossil fuels (e.g., oil, natural gas, coal), solid waste decay, trees and wood products and also as a result of chemical reactions (e.g., manufacture of cement). The two primary sources of CO₂ in the US are fuel combustion including transportation emissions. CO₂ can be removed from the atmosphere (or “sequestered”) when it is absorbed by plants as part of the photosynthesis process and biological carbon cycle. (Simply put, a plant takes in CO₂ molecules and combines them with water molecules to make a sugar that feeds the plant, excess oxygen splits from the CO₂ molecules—sunlight provides the energy for this process to occur—and is released back into the atmosphere.) However, in areas where CO₂ concentration ratios may exceed the intake capabilities by plants this gas contributes negatively to GHG effects.

Methane. CH₄ is a GHG that is emitted during the production and transport of coal, natural gas, and oil. Methane emissions also result from livestock and other agricultural practices and by the decay of organic waste in municipal solid waste landfills.

Nitrous Oxide. N₂O is a GHG that is emitted during agricultural and industrial activities, as well as during combustion of fossil fuels and solid waste.

Fluorinated Gases. Hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), sulfur hexafluoride (SF₆), chlorofluorocarbons (CFCs), and hydrochlorofluorocarbons (HCFC) are synthetic, GHGs with high CO₂e factors that are emitted from a variety of industrial processes. HFCs, PFCs, and SF₆ are sometimes used as substitutes for ozone-depleting fluorinated gases (i.e., CFCs, HCFCs, and halons). HFCs, PFCs, and SF₆ are typically emitted in smaller quantities and, while these substances do not deplete ozone, they are potent GHGs and are referred to as *high global warming potential gases*.

3.1.1.3 Clean Air Act Amendments

The Clean Air Act Amendments (CAAA) of 1990 place most of the responsibility to achieve compliance with NAAQS on individual states. Areas not in compliance with any of the NAAQS can be declared *nonattainment* areas by the EPA or the appropriate state or local agency. Nonattainment areas are declared for each specific pollutant addressed by the NAAQS. Once the EPA declares an area as *nonattainment*, the EPA requires the state to prepare a State Implementation Plan (SIP). A SIP is a compilation of goals, strategies, schedules and enforcement actions that will lead the state into compliance with the NAAQS. Should the state and local air agencies fail to develop adequate SIPs, the EPA will develop a Federal Implementation Plan to remedy the state's failure. To be redesignated to *attainment*, the area must show through monitoring and modeling that pollutant levels are consistently meeting the NAAQS and have been maintained for a period of 10 consecutive years. During this period of time, the declared area is in transitional attainment, or better known as a *maintenance area*.

Under 40 CFR 93, the EPA issued conformity regulations that mandate the federal government not to engage, support, or provide financial assistance for licensing or permitting, or approval of any activity that does not conform to an approved SIP or Federal Implementation Plan. This rule applies to all federal actions except for those projects requiring funding or approval from the US Department of Transportation, the Federal Highway Administration, the Federal Transit Administration, or the Metropolitan Planning Organization; these projects must instead comply with the conformity rules established by the US Department of Transportation. The General Conformity Rule establishes conformity as a process in which economic, environmental, and social aspects of transportation and air quality planning are considered. This rule applies to any federal action that results in direct or indirect emissions of criteria pollutants that exceed the rates specified in 40 CFR 93.153(b)(1) and (2) in a *nonattainment or maintenance area*.

3.1.1.4 Regulatory Changes

Air quality regulatory standards are periodically reviewed by the EPA. Both the Oklahoma Department of Environmental Quality (DEQ) Air Quality Division and the EPA are planning for review of major environmental laws that will likely result in more stringent standards for the criteria pollutants and the determination of *prevention of significant deterioration* (PSD) rules. The changes that are expected to have the greatest impact on the proposed action are changes to the NAAQS.

The EPA's Fall 2009 Regulatory Plan and Semiannual Regulatory Agenda identifies the determine the PSD implications of declaring CO₂ as an air quality pollutant. The anticipated revision of the NAAQS for ground-level ozone to an estimated range of 60 to 70 parts per billion would place Oklahoma County in nonattainment status for ozone (EPA 2010a, 2010b). In 2010 the EPA strengthened the SO₂ and NO₂ standards and has received comments regarding the proposed revisions to ground-level ozone. As of the date of this report, proposed revisions for a new ground-level ozone standard have not been published or established in the *Federal Register*.

On 13 May 2010, the EPA issued the final rule on addressing GHG emissions from stationary sources under the CAA. This final rule, also known as the Tailoring Rule, establishes a schedule of CAA permitting programs to define which facilities will be required to obtain PSD and Title V permits. The first scheduled phase began on 2 January 2011, establishing a GHG permitting program for large GHG emitters, such as power plants, refineries, and cement production facilities subject to PSD permitting. Under this new rule, any newly constructed facility or existing facility modified in a way that substantially increases emissions of pollutant other than GHGs will be subject to permitting requirements for GHG emissions under PSD. For these projects, only GHG emissions above 75,000 tons per year (tpy), on a CO₂e basis, will be required to undergo a best available control technology analysis. Similarly under the operating permit program, only sources subject to the program (i.e., newly constructed or existing major 2010d).

Phase 2 of this rule will begin in July 2011 and continue through June 2013. This phase will involve sources subject to PSD permitting requirements for new construction projects that emit GHG emissions of at least 100,000 tpy even if they do not exceed PSD permitting thresholds for any other pollutant. Modifications of existing facilities that increase GHG emissions by at least 75,000 tpy will be subject to permitting requirements, even if they do not significantly increase emissions of any other pollutant. Additionally, operating permit requirements will, for the first time, apply to sources based on their GHG emissions even if they do not apply based on emissions of other pollutants. Facilities emitting at least 100,000 tpy CO₂e will be subject to Title V permitting requirements (EPA 2010d).

3.1.1.5 Energy and Sustainability

EO 13514, *Federal Leadership in Environmental, Energy, and Economic Performance*, was issued on 4 October 2009. The EO concentrates the attention of federal agencies on promoting the establishment of an integrated system for development that promotes environmental sustainability by federal government agencies and emphasizes the reduction of GHG emissions. The principal GHGs that enter the atmosphere due to human activities include carbon dioxide, methane, nitrous oxide and fluorinated gases. The federal government is taking actions to reduce GHGs through means such as streamlining infrastructure to minimize vehicle use and vehicle emissions (i.e., idling), and reducing facility consumption of energy by implementing energy conservation projects.

To comply with EO 13514, the proposed project has been evaluated for its impact on the federal government's goal to reduce GHG emissions by reducing energy consumption through strategic sustainable development, energy-efficient building design, and environmentally friendly building material selection. The project alternatives have been evaluated for their adherence to the EO and the *Federal Leadership in High Performance and Sustainable Buildings Memorandum of Understanding* referenced within the EO, as it pertains to identifying energy-reduction opportunities and siting considerations.

3.1.2 Existing Conditions

3.1.2.1 Climate

Oklahoma County is located in the Interior Lowlands physiographic region. The county has two major land resource areas (MLRA): the eastern half of the county is in the Northern Cross Timbers MLRA, and the western half is in the Central Rolling Red Prairies MLRA (US Department of Agriculture 2003). In winter, the average daily temperature is 38.6 degrees Fahrenheit (°F), and the average daily minimum temperature is 27.8°F. In summer the average temperature is 80°F, and the average daily maximum temperature is 91.1°F. The average annual precipitation is 33.35 inches. The majority of precipitation, 74 percent, usually falls from April through October; the average seasonal snowfall is 9.1 inches. Prevailing winds blow from the south with the average speed of 14 miles per hour in March and April (US Department of Agriculture 2003).

3.1.2.2 Local Air Quality

Oklahoma County is currently designated by the EPA as an *attainment* area for CO, SO₂, NO₂, and particulate matter (PM₁₀ and PM_{2.5}). A five-year Ozone *Early Action Compact* for Oklahoma City was initiated and was completed in December 2007. In June 2008, the Association of Central Oklahoma Governments (ACOG) developed an 8-hour ozone flex plan for Oklahoma City for the successive five years, similar to the Ozone *Early Action Compact* (ACOG 2008). This voluntary plan identified strategies that would reduce transportation-related emissions by improving traffic flow and reducing congestion throughout the region. Typical control strategies

included intersection improvements, traffic signal modifications, signal coordination efforts, intelligent transportation techniques, and travel reduction programs.

Eleven air quality monitoring stations are located within Oklahoma County, including one CO monitoring station, one PM₁₀ monitoring station, three PM_{2.5} monitoring stations, one SO₂ monitoring station, three ozone monitoring stations, and two NO₂ monitoring stations. According to EPA AirData, ambient level concentrations for PM₁₀, PM_{2.5}, NO₂, and CO within Oklahoma County have not exceeded the primary NAAQS during the years 1998 to 2008; however, concentrations of ozone have exceeded the 8-hour NAAQS within the same period (EPA 2010c).

3.1.2.3 Tinker AFB and MROTC

Tinker AFB

The DEQ, which publishes regulations for air quality and permitting for all counties in Oklahoma, has jurisdiction over and regulates air emissions associated with Tinker AFB. Under the CAAA, the Title V Operating Permit Program imposes requirements for air quality permitting on air emission sources. Also under the CAAA, the National Emission Standards for Hazardous Air Pollutants (NESHAP) program specifies various provisions for regulated sources, including limits on hazardous air pollutant (HAP) emissions, compliance demonstrations and performance testing, monitoring, recordkeeping, and reporting. Tinker AFB is categorized as a major source under the Title V program and is also regulated under the NESHAP since its potential emissions from stationary sources exceed 100 tpy of any of the criteria pollutants, or 10 tpy of any single HAP, or 25 tpy of any combination of HAPs. Tinker AFB maintains a Title V Air Permit (DEQ 2010). The following are the primary onsite emission sources at Tinker AFB:

- Stationary combustion sources (e.g., boilers, water heaters, furnaces, gasoline and diesel-fuel generators, engine test cells).
- Operational sources (e.g., chemical usage, paints, degreasers, abrasive blasting, welding operations, fuel cell maintenance, wastewater treatment, small arms firing range).
- Fuel-storage/transfer operations (e.g., horizontal tanks, internal floating roof tanks).
- Mobile sources (e.g., vehicle operations, aircraft operations, trim and power checks, aerospace ground equipment). Mobile sources are not regulated under the Title V program but rather fall under the Non-Road Mobile Source program, Fuel Efficiency and Corporate Average Fuel Economy standards.

MROTC

Maintenance operations at the MROTC facility do not include the use of any fueled aircraft or require engine run-ups. Therefore, emissions generated at the MROTC consist primarily of those produced by the building utilities (e.g., heating and cooling systems), those produced during aircraft tow trips from Tinker AFB across Douglas Boulevard to the MROTC, and those directly associated with aircraft maintenance. Heating and cooling of the hangar spaces is performed through the use of diesel heaters and air conditioners. The emissions at the MROTC are

generated by authorized Tinker AFB activities, and are currently accounted for within the Tinker AFB Title V permit.

No-Action Alternative Sites

The on-base No-Action Alternative sites are regulated under the Tinker AFB Title V Air Permit previously discussed.

3.2 Cultural Resources

3.2.1 Definition of Resource

Cultural resources represent and document activities, accomplishments, and traditions of previous civilizations and link current and former inhabitants of an area. Depending on their conditions and historic use, these resources may provide insight into living conditions in previous civilizations, and they may retain cultural and religious significance to modern groups.

Archaeological resources include areas where prehistoric or historic activity measurably altered the environment or deposits of physical remains (e.g., arrowheads, bottles) discovered therein. Architectural resources include standing buildings, districts, bridges, dams, and other structures of historic or aesthetic significance. Architectural resources generally must be more than 50 years old to be considered for inclusion in the National Register of Historic Places (NRHP), an inventory of culturally significant resources identified in the United States; however, more recent structures, such as Cold War-era resources, may warrant protection if they have the potential to gain significance in the future. Traditional cultural resources can include archaeological resources, structures, neighborhoods, prominent topographic features, habitats, plants, animals, and minerals that Native Americans or other groups consider essential for the persistence of traditional culture.

The principal federal law addressing cultural resources is the National Historic Preservation Act (NHPA) of 1966, as amended (16 USC §470), and its implementing regulations (36 CFR 800). The regulations describe the procedures for identifying and evaluating historic properties, assessing the effects of federal actions on historic properties, and consulting to avoid, reduce, or minimize adverse effects. These procedures are commonly referred to as the Section 106 process. As part of the Section 106 process, agencies are required to consult with the State Historic Preservation Office.

The term *historic properties* refers to cultural resources that meet specific criteria for eligibility for listing on the NRHP; however, historic properties need not be formally listed on the NRHP. Section 106 does not require the preservation of historic properties but ensures that the decisions of federal agencies concerning the treatment of these places result from meaningful considerations of cultural and historic values and of the options available to protect the properties. The Proposed Action is an undertaking as defined by 36 CFR 800.3 and is subject to requirements outlined in Section 106.

DoD's American Indian and Alaska Native Policy governs the department's interactions with federally recognized tribes. The policy outlines DoD trust obligations, communication procedures with tribes on a government-to-government basis, consultation protocols, and actions to recognize and respect the significance that tribes ascribe to certain natural resources and properties of traditional cultural or religious importance. The policy requires consultation with federally recognized tribes for proposed activities that could significantly affect tribal resources or interests.

3.2.2 Existing Conditions

3.2.2.1 Regional History

Inhabited by plains tribes and sold to the US by France as a part of the 1803 Louisiana Purchase, much of what is now Oklahoma was subsequently designated as Indian Territory. As such, it was intended to provide a new home for tribes forced by the federal government to abandon their ancestral lands in the southeastern US. Many of those forced to relocate in the 1830s were from what were called the Five Civilized Tribes—Cherokee, Choctaw, Chickasaw, Creek, and Seminole—who soon set up independent nations in the new territory. After the Civil War, the pressure of westward expansion brought railroads into the Indian Territory, where the US government began to declare some land available for settlement.

Prairie land surrounding a Santa Fe railroad boxcar station was designated as a townsite when presidential proclamation opened the central portion of the Indian Territory to claims stakers in 1889 (Oklahoma City Convention and Visitors Bureau 2010). That settlement (now Oklahoma City) attained official status in 1890, just a few weeks after the western half of the Indian Territory was redesignated Oklahoma Territory. Railroad connections to the city helped make it a center for trade, milling, and meat packing (Oklahoma City Convention and Visitors Bureau 2010).

3.2.2.2 Tinker AFB and MROTC

Tinker AFB

Tinker AFB has implemented an Integrated Cultural Resources Management Plan (ICRMP) which is designed to assist the installation in continuing to maintain and operate existing facilities and in developing new facilities, as needed, in compliance with federal and state legislation protecting cultural resources (Tinker AFB 2005a). Cultural resources are protected under the NHPA of 1966, as amended. Both significant archaeological and historic architectural resources that have not been evaluated must be considered eligible for the NRHP until appropriately evaluated and State Historic Preservation Office concurrence has been documented (Tinker AFB 2005a).

The entire land area of Tinker AFB has been surveyed for archaeological resources, and approximately 131 known archaeological sites are present in areas adjacent to the base (Tinker AFB 2005a). Two historic property types have been identified at Tinker AFB: facilities

associated with aircraft construction and modification, 1942-1946; and facilities associated with the Cuban Missile Crisis, 1962. Tinker AFB has five individually eligible buildings and the Douglas Cargo Aircraft Manufacturing Historic District.

Tinker AFB has consulted with three Native American tribes: the Seminole Nation, Osage Nation, and Muskogee Nation. These tribes have verbally commented that they have no Native American Graves Protection and Repatriation Act or American Indian Religious Freedom Act concerns about Tinker AFB property (Tinker AFB 2005a). Additionally, they have communicated that Tinker AFB property is not suitable for religious or burial sites (Tinker AFB 2005a). The site of the Preferred Alternative and Alternative 2 contain no known or suspected traditional cultural properties.

MROTC

The MROTC was surveyed for archaeological resources in 2001 (Tinker AFB 2002a). The results of the survey identified three historic sites. The sites have been impacted, but not destroyed by past developments in the area. All three sites were recommended ineligible for listing on the NRHP due to lack of integrity and limited research potential (Tinker AFB 2002a).

None of the historic buildings located within the current base boundaries of Tinker AFB are within the MROTC property. The Douglas Cargo Aircraft Manufacturing Historic District is located immediately northwest of the MROTC.

No-Action Alternative Sites at Tinker AFB

Five facilities at Tinker AFB have been tentatively identified as receiving locations for activities currently performed at the MROTC under implementation of the No-Action Alternative: B2136, B2122, B2121, B240, and B3001. Two of the five identified No-Action Alternative sites are individually eligible for NRHP listing, one of which is also part of the Douglas Cargo Aircraft Manufacturing Historic District.

B240. B240, formerly known as the Flight Test Hangar/Base Operations Building, was constructed in 1942 and was one of the original hangars at the Oklahoma City Air Depot. B240 was the center of activities for the Air Depot due to its location at the intersection of two major runways, and also served as a reception area for important military and governmental officials traveling in governmental aircraft (Tinker AFB 2005a). B240 was also important to the mainland defense activities due to the central location of Oklahoma City Air Depot to the mainland US and housed some of the continental defense functions (Tinker AFB 2005a). Character-defining features of B240 include the three-bay, International style of design; horizontal bands of industrial windows; and large hangar doors flanked by projected concrete surrounds with vertical detailing. The roof of B240 consists of a double-monitor roof above each hangar and a flat roof above the central bay (Tinker AFB 2005a).

B3001. B3001 was constructed in 1942 as the Douglas Assembly Building and is located in the Douglas Cargo Aircraft Manufacturing Historic District. The historic buildings and structures in the district were constructed between 1942 and 1943 and are historically significant for their roles in the Douglas Cargo Aircraft Plant's World War II efforts to produce C-47 transport

aircraft for the US Army. B3001 is the main contributing building in the district, and is also individually eligible for NRHP listing. The Assembly Building, B3001, is architecturally significant for several reasons, including of its size—approximately 3,374 feet long and 926 feet wide—making it the largest building in Oklahoma (Tinker AFB 2005a). B3001 was constructed in the International style, with steel columns and trusses for the superstructure and brick masonry exterior walls (Tinker AFB 2005a). The building was designed with a completely windowless “blackout” plan with artificial light and air conditioning, which is important in terms of architectural design (Tinker AFB 2005a).

3.3 Environmental Justice and Protection of Children

3.3.1 Definition of Resource

In 1994, EO 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*, was issued to focus attention of federal agencies on human health and environmental conditions in minority communities and low-income communities and to ensure that disproportionately high and adverse human health or environmental effects on these two communities are identified and addressed.

Because children may suffer disproportionately from environmental health risks and safety risks, EO 13045, *Protection of Children from Environmental Health and Safety Risks*, was introduced in 1997 to prioritize the identification and assessment of environmental health risks and safety risks that may affect children and to ensure that federal agencies’ policies, programs, activities, and standards address such risks to children.

Data for analysis of Environmental Justice were collected from the 2008 US Census Bureau *American Community Survey (ACS)* (US Census Bureau 2008). Data are provided for Oklahoma City, Midwest City, and Del City, and are compared to data for Oklahoma County and the state of Oklahoma to determine if any minority or low-income communities could potentially be disproportionately affected by the Proposed Action. Data for analysis of protection of children were collected from the 2008 US Census data (US Census Bureau 2008); data were provided Oklahoma City, Midwest City, and Del City. The data were compared to data for Oklahoma County and the State of Oklahoma to determine if the health and safety of children could be affected by the Proposed Action.

3.3.2 Existing Conditions

3.3.2.1 Regional Setting

Minority Populations

According to the 2008 US Census Bureau *ACS*, approximately 47 percent of the population of Oklahoma City is classified as minority, similar to Midwest City (40.8 percent) and greater than Del City (34.9 percent) (Table 3-1). Most of the minority population in Oklahoma City has Hispanic/Latino (14.6 percent of total minority population) or African-American (14.1 percent of

total minority population) backgrounds. Most of the minority population in Midwest City and Del City are of African-American background (19.1 and 18.8 percent of total minority population, respectively). By comparison, percentages of minorities were similar for Oklahoma County (48.7 percent) and lower for the state (32.0 percent). Persons of other/multiracial background were the largest minority group in both of these geographical areas (16.4 percent and 8.9 percent of total minority population, respectively), similar in proportion to that for Oklahoma City and Midwest City (11.4 percent each of total minority population) (US Census Bureau 2008).

Table 3-1. Estimated Racial Demographics: 2008

Geographical Area	Oklahoma City	Midwest City	Del City	Oklahoma County	Oklahoma State
Total Population ¹	544,157	53,674	22,446	699,440	3,606,200
Total Minority Population²	255,582 (47.0%)	21,874 (40.8%)	7,829 (34.9%)	340,466 (48.7%)	1,154,229 (32.0%)
Hispanic/Latino ³	79,617 (14.6%)	2,484 (4.6%)	1,306 (5.8%)	86,188 (12.3%)	265,460 (7.4%)
Asian-American	21,543 (4.0%)	1,279 (2.4%)	398 (1.8%)	21,890 (3.1%)	58,499 (1.6%)
African-American	76,505 (14.1%)	10,244 (19.1%)	4,212 (18.8%)	98,721 (14.1%)	263,492 (7.3%)
Native American/Alaska Native	15,774 (2.9%)	1,684 (3.1%)	807 (3.6%)	18,679 (2.7%)	241,908 (6.7%)
Native Hawaiian/Pacific Islander	382 (0.1%)	76 (0.1%)	0 (0.0%)	629 (0.1%)	3,557 (0.1%)
Other/Multiracial ⁴	61,770 (11.4%)	6,107 (11.4%)	1,106 (4.9%)	114,359 (16.4%)	321,313 (8.9%)
Nonminority Population⁵	288,575 (53.0%)	31,800 (59.2%)	14,617 (65.1%)	358,974 (51.3%)	2,451,971 (68.0%)

Source: US Census Bureau 2008

Notes:

- ¹ Data are estimated and contain a margin of error of +/- 0.1 percent.
- ² Minorities are persons classified by the US Census Bureau as Hispanic/Latino, Asian-American, African-American, Native American, Alaska Native, Native Hawaiian, Pacific Islander, Other Race, or Multiracial.
- ³ Hispanic/Latinos are persons of any racial background with a Hispanic/Latino cultural heritage.
- ⁴ Other/multiracial includes persons of two or more races and persons of races not categorized above.
- ⁵ Nonminority population includes persons who are White, European-American, and/or Middle Eastern.

Low-Income Populations

According to the 2008 US Census Bureau ACS, Oklahoma City had an estimated poverty rate of 16.5 percent for all individuals and a rate of 12.5 percent for families (Table 3-2). These values had slightly lower poverty rates for both families (7.0 percent) and individuals (11.3 percent) (US Census Bureau 2008).

Table 3-2. Estimated Poverty Rates: 2008

Geographical Area	Oklahoma City	Midwest City	Del City	Oklahoma County	Oklahoma State
Families below Poverty Level (percent) ¹	12.5	12.0	7.0	12.1	12.0
Individuals below Poverty Level (percent) ¹	16.5	15.1	11.3	16.2	16.2

Source: US Census Bureau 2008

Note: ¹ Data are estimated and contain a margin of error of +/- 0.1 percent.

Protection of Children

To comply with EO 13045, the number of children under age 18 living in the vicinity of Tinker AFB was examined; Oklahoma City, Midwest City, and Del City were used to represent the area surrounding Tinker AFB. These data were compared to county- and state-level data. Additionally, locations where children may be concentrated (e.g., child care centers, schools, parks, residential communities) were identified to address potentially disproportionate health and safety risks to children that may result from implementation of the Preferred Alternative or alternatives.

According to 2008 US Census Bureau data, approximately 26 percent of Oklahoma City is under the age of 18, similar to that for ACS Midwest City (26.8 percent) and Del City (27.0 percent; Table 3-3). The population of children in these cities is similar to that for Oklahoma County (26.2 percent) and slightly greater than for the state (24.9 percent).

Table 3-3. Estimated Age Demographics: 2008

Geographical Area	Oklahoma City	Midwest City	Del City	Oklahoma County	Oklahoma State
Total Population	544,157	53,674	22,446	699,440	3,606,200
Population under 18 Years	141,235	14,382	6,061	183,213	899,073
Percent of Population under 18 Years	26.0	26.8	27.0	26.2	24.9

Source: US Census Bureau 2008

Note: ¹ Data are estimated and contain a margin of error of +/- 0.1 percent.

3.3.2.2 Proposed Action Area

Racial and poverty demographics were evaluated only at the regional scale due to the availability of data. Therefore, this discussion does not address Tinker AFB, MROTC, and the No-Action Alternative sites separately.

In addition to the demographics presented previously, the location of child care centers, schools, parks, and residential communities were evaluated in regard to protection of children. The nearest child development center is approximately 1.5 miles north of the proposed project site. The nearest school is approximately 1.5 miles east of the proposed project site, and the nearest

park is approximately 2.5 miles north of the proposed project site. Scattered residential areas are located approximately 0.7 mile to the east and northeast of the proposed project site.

3.4 Hazardous Materials and Wastes

3.4.1 Definition of Resource

Hazardous materials are defined as substances with strong physical properties of ignitability, corrosivity, reactivity, or toxicity that may cause an increase in mortality, a serious irreversible illness or incapacitating reversible illness, or pose a substantial threat to human health or the environment. Hazardous wastes are defined as any solid, liquid, contained gaseous or semisolid waste, or any combination of wastes that pose a substantial present or potential hazard to human health or the environment.

Issues associated with hazardous materials and wastes typically center around underground storage tanks (USTs); aboveground storage tanks (ASTs); and the storage, transport, and use of pesticides, bulk fuel, petroleum, oils and lubricants. When such resources are improperly used they can threaten the health and well-being of wildlife species, botanical habitats, soil systems, water resources, and people.

To protect habitats and people from inadvertent and potentially harmful releases of hazardous substances, the DoD has dictated that all facilities develop and implement Hazardous Waste Management Plans or Spill Prevention and Response Plans. Also, the DoD has developed the Environmental Restoration Program (ERP), intended to facilitate thorough investigation and cleanup of contaminated sites at military installations. These plans and programs, in addition to established legislation (e.g., Comprehensive Environmental Response, Compensation, and Liability Act [CERCLA] and Resource Conservation and Recovery Act [RCRA]) effectively form the “safety net” intended to protect the ecosystems on which most living organisms depend.

3.4.2 Existing Conditions

3.4.2.1 Hazardous Materials and Petroleum Products

Tinker AFB

Hazardous materials are utilized to perform the mission of Tinker AFB. The Hazardous Materials Management Program (HMMP) manages the procurement and use of hazardous materials at the base. The HMMP functions through the Hazardous Materials Pharmacy, which consists of a decentralized Hazardous Materials Pharmacy Cell and a hazardous materials electronic tracking system, the Hazardous Materials Management System (HMMS). The HMMS database management system performs the following automated functions:

- Tracks training, exposure, inventory, and personal protective equipment
- Dispenses hazardous materials according to units of use

- Serves as the central issue point for just-in-time control and issue
- Creates online Material Safety Data Sheets
- Maintains hazardous materials control by authorized user, zone and task

The tracking system provides the data necessary to meet reporting requirements, assess processes for pollution prevention opportunities and measure success in minimizing hazardous materials usage (Tinker AFB 2009).

Tinker AFB's OC-ALC Plan 19-2, *Spill Prevention and Emergency Response Plan for Hazardous and Extremely Hazardous Material and Spill Prevention Control and Countermeasures Plan* (Tinker AFB 2004), presents specific procedures for preparing for and responding to inadvertent discharges of oil or releases of hazardous substances at the base.

MROTC Facility

Although the MROTC facility is contracted by Tinker AFB, activities performed by Tinker AFB at the MROTC comply with all existing and approved hazardous materials and wastes protocols in place at the base. Small quantities of hazardous materials are used on the MROTC during aircraft modifications. Activities associated with the aircraft modifications include inspections of electrical systems, modifying sensors and wiring, lubricating various components, removing satellite communication antennas, removing hardware and cabinetry, performing structural sheet metal work, sealing and waterproofing electrical panels, and touch-up painting. The chemicals used include alodine for sheet metal work, alcohol, hydraulic fluid, aircraft grease, silicon sealants, and liquid paint (Tinker AFB 2010b). An initial accumulation point (IAP) has been established at the MROTC, and is currently used for the storage of hazardous chemicals. The Tinker AFB HMMP manages the procurement and use of hazardous materials at the MROTC. According to Tinker AFB personnel, all aircraft are stored empty (without fuel) at the facility, and the standard operating procedure is to defuel the aircraft before they are towed to the MROTC from Tinker AFB.

No-Action Alternative Sites

The No-Action Alternative sites identified on Tinker AFB use the HMMS tracking system discussed previously for Tinker AFB. These sites also adhere to the Tinker AFB OC-ALC Plan 19-2, *Spill Prevention and Emergency Response Plan for Hazardous and Extremely Hazardous Material and Spill Prevention Control and Countermeasures Plan* (Tinker AFB 2004), for preparing for and responding to inadvertent discharges of oil or releases of hazardous substances at the base, as well as the SWPPP previously discussed for Tinker AFB.

3.4.2.2 Hazardous Waste Generation and Accumulation

Tinker AFB

Tinker AFB is permitted as a large-quantity hazardous waste generator and holds a Part B permit for its hazardous waste storage facility in B810 (Tinker AFB 2009). The permit was issued by

the DEQ with an effective date of July 2001 (Tinker AFB 2009). The DEQ serves as the primary oversight agency for RCRA compliance in Oklahoma. Hazardous wastes at the base are managed in accordance with the most recent hazardous waste management instruction guidelines (Tinker AFB Instruction 32-7004). Compliance with the provisions, regulations and mandates put forth in Tinker AFB Instruction 32-7004 is mandatory for actions involving hazardous waste on the installation. The purpose of the guidelines is to ensure safe and effective collection, handling, and disposal of hazardous waste on the installation in a manner that complies with applicable DoD and USAF regulations and federal and state laws (Tinker AFB 2005a). The largest volume of hazardous waste at the base is generated by aircraft and jet engine maintenance and overhaul activities. These activities include the following:

- Preparation of aircraft skins and structural members
- Paint removal and application, degreasing, metal etching, and carbon removal of engines
- Abrasive blasting

Conducting these activities requires the use of large volumes of solvents and the generation of dust and liquid wastes. Other hazardous wastes contributing to this waste stream include petroleum products and waste, hydraulic fluid, antifreeze, and mercury-containing light bulbs and ballasts. Disposal of mercury-containing light bulbs must be conducted in accordance with the Universal Waste Rule (40 CFR 273); this rule specifies procedures for proper disposal and storage of used mercury-containing light bulbs and ballasts. The Hazardous Wastes Management program at Tinker AFB has prepared a plan for the replacement of such light bulbs and ballasts and should be contacted prior renovation or demolition activities to ensure that appropriate measures are implemented to adhere to established guidelines.

Another large hazardous waste stream generated at Tinker AFB results from RCRA corrective actions on past contaminated sites and remediation of a National Priorities List site on the base. These wastes consist of solvent-, hydrocarbon-, and metal-contaminated soil and debris removed during remediation projects. Other hazardous waste at Tinker AFB is generated from remodeling or demolition of older buildings. Due to the age of certain buildings on base, there is a potential for building materials to contain hazardous substances such as asbestos and lead-based paint. Operational activities including vehicle building, grounds maintenance, and wastewater treatment also generate hazardous waste.

According to the Fiscal Year (FY) 2009 *Internal Environmental Compliance Assessment and Management Program [ECAMP] Final Report for Tinker AFB*, approximately 345 organizations on the base generate hazardous waste. Hazardous wastes are accumulated at the site of generation in initial accumulation points (IAPs; an IAP refers to the container for collecting hazardous waste) located throughout the base (Tinker AFB 2009). In some areas, waste collection sites (e.g., hazardous waste storage) are used to accumulate wastes during work shifts; wastes are then transferred to an appropriate IAP at the end of the work shift (Tinker AFB 2009). Waste staging areas are used for some locations where wastes from multiple IAPs are staged for pickup and transfer to one of two accumulation points (APs), located in B809 and

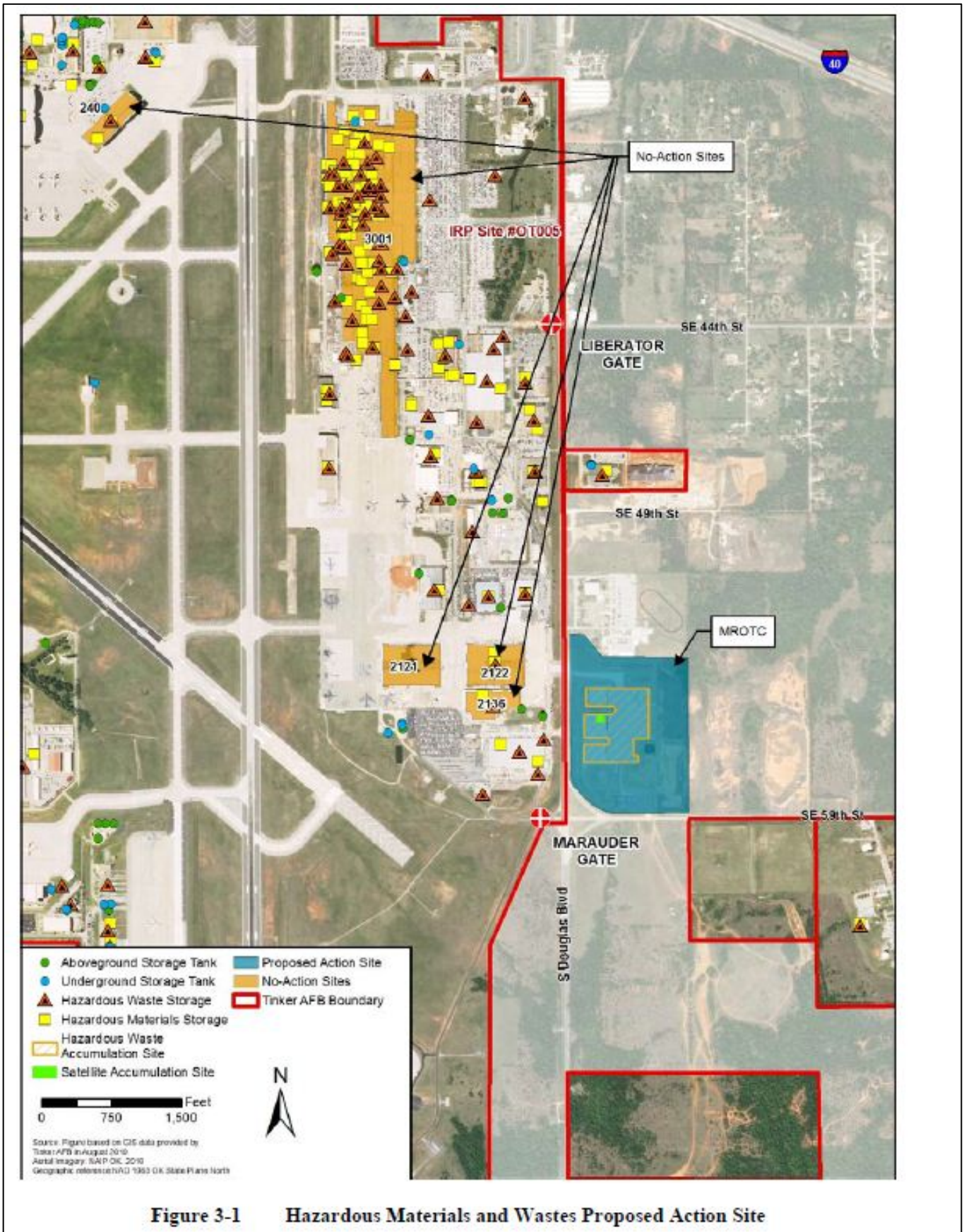
B2125 (Tinker AFB 2009). These containers are tracked from the issue of an empty container through disposal of the container using the HMMS. B809 is the largest of the APs and processes the majority of containerized hazardous waste from the IAPs for transfer to the treatment, storage, or disposal facility (TSDF). The TSDF is located in B810 and is operated by the Defense Reutilization and Marketing Office. The role of the TSDF is limited to conforming storage (Tinker AFB 2009). B810 and B811 temporarily house hazardous waste for a period up to one year (Tinker AFB 2005b). Serialized accumulation containers for nonbulk hazardous waste are issued to waste generators and picked up when full (Tinker AFB 2009). Profiling is completed using either generator knowledge or laboratory analysis to identify and quantify the chemical constituents of the waste for proper treatment and disposal. Containers are then shipped off site for disposal.

There are three areas on Tinker AFB where noncontainerized waste is accumulated in APs. The industrial wastewater treatment plant accumulates dewatered hazardous waste sludge in a roll-off bin that is picked up directly by a contractor and taken to an appropriate TSDF (Tinker AFB 2009). B3125 contains an AP where drums are rinsed and crushed, aerosol cans are punctured and crushed, and blast media wastes are accumulated (Tinker AFB 2009). The chemical cleaning line in B3001 includes hazardous waste tanks, which are only used when there is a malfunction in the process line (Tinker AFB 2009). Figure 3-1 shows hazardous waste accumulation sites on Tinker AFB in the vicinity of the MROTC.

MROTC

Small quantities of hazardous wastes are generated by Tinker AFB in the hangars of the MROTC during aircraft modifications. The aircraft equipment being modified includes wiring, antennae, and radar equipment; hazardous wastes generated include alodine solution for sheet metal work, paint, silicon, and sealants. The MROTC facility is regulated as a conditionally exempt small quantity generator. Their approved waste streams include the following:

- Contaminated wipes, personal protective equipment, and containers with alodine
- Oil-based paint and thinner in cans
- Paint debris with no free liquid
- Lithium batteries
- Alkaline and nickel-cadmium batteries
- Used oil and absorbent mixture
- Waste aerosol spray cans; and
- Used oil



A hazardous waste generation point is where a waste is initially created or generated. After generation, the hazardous waste must be immediately transferred to an initial (satellite) accumulation point or an accumulation site. Waste cannot be accumulated or stored at the generation point unless the area has been designated as an approved accumulation area. An IAP has been established at the MROTC and is currently operational. Hangar #2, is also a satellite accumulation point that contains 55-gallon drums over secondary containment pads (Tinker AFB 2010b). The area also contains storage lockers for hazardous materials. These locations are shown in Figure 3-1.

No-Action Alternative Sites

Several of the identified No-Action Alternative sites on Tinker AFB contain hazardous materials storage sites. B240, B2121 and B2122, and B2136 each contain a single hazardous materials storage site, such as storage lockers, cabinets, or drums (Tinker AFB 2009). B3001 contains more than 30 hazardous waste generation and accumulation sites (e.g., multiple storage lockers, cabinets, and drums). In addition, the chemical cleaning line in B3001 utilizes hazardous waste tanks that store materials generated from cleaning line operations. Figure 3-2 shows general locations of hazardous waste storage sites at the identified No-Action Alternative sites on the base.

3.4.2.3 Fuel Storage

Tinker AFB

The fuels and materials stored and handled in bulk at the base include jet propellant 5 (JP-5), JP-8, and pulverized fuel 1 (PF-1; aviation fuels), JP-10 (missile fuel), motor gasoline (Mogas; automotive gasoline), diesel fuel, biodiesel fuel, No. 2 heating oil, PD-680 (solvent), and deicing fluid. Conoco supplies JP-8 fuel to Tinker AFB through a 6-inch-diameter supply line that enters the northern section of the base and continues to the main tank farm (Tinker AFB 2005b). Tanker trucks are used as a backup to deliver JP-8, which is dispensed to aircraft either from one of the 11 refueler vehicles (R-11s) or directly through hydrants located on the aprons on the western, southern, and eastern sides of the base (Tinker AFB 2009).

Various fuels at the base are also stored in ASTs and USTs. Releases from ASTs and USTs (i.e., spills, overfill, and leaks) can cause fires or explosions that threaten human safety and can contaminate soil and groundwater that threaten human health. The main goal of the base's storage tank program is to protect groundwater and soil from contamination by ensuring that the following:

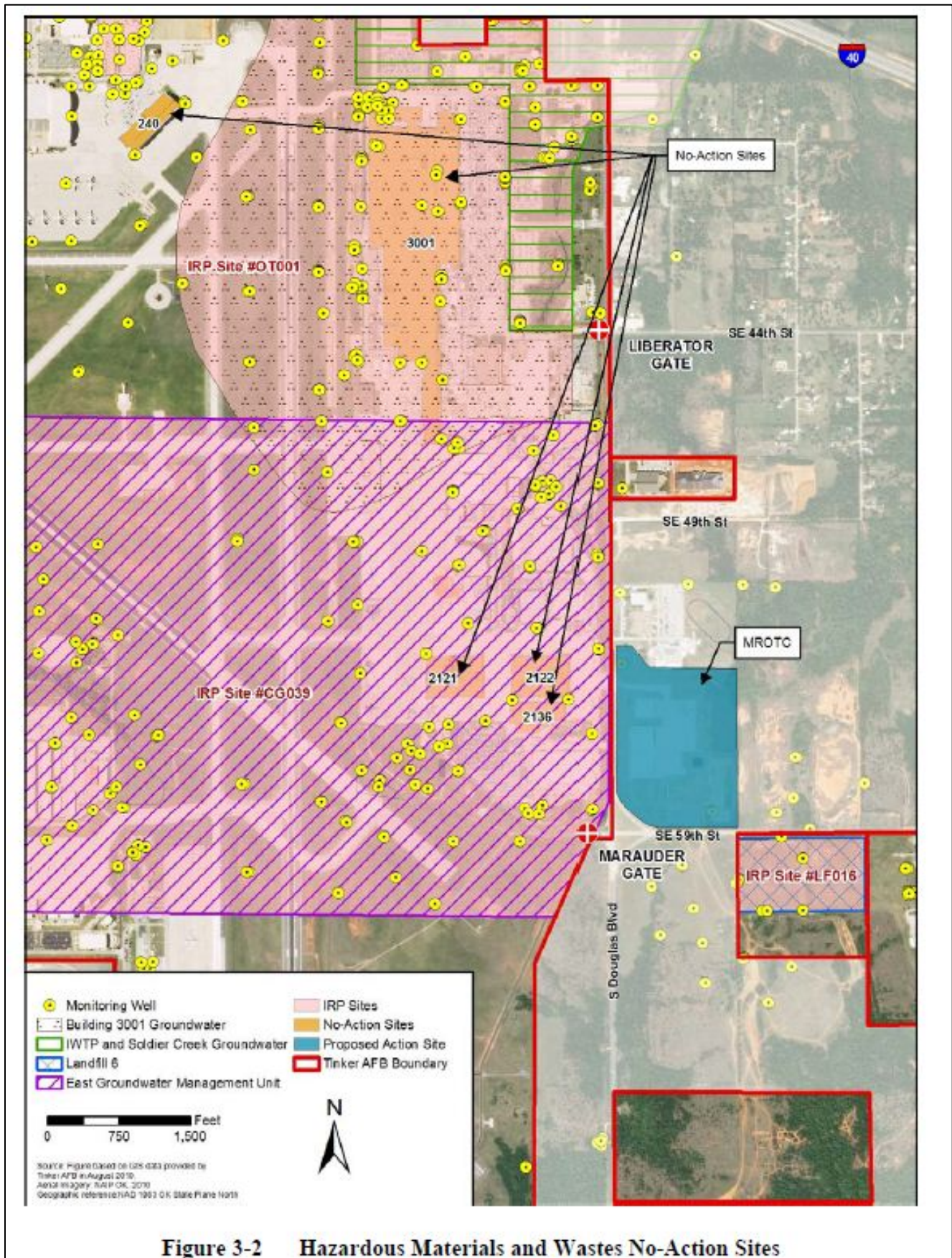


Figure 3-2 Hazardous Materials and Wastes No-Action Sites

- All ASTs meet applicable requirements including requirements for leak testing and preventing, responding to, reporting, and cleaning up spills.
- New USTs (including piping) are designed and constructed to provide: corrosion protection, release detection, spill and overflow prevention, proper installation, and secondary containment.
- All existing USTs (any regulated UST installed before 22 December 1988) are upgraded to meet the standards for new USTs (Tinker AFB 2005b).

An aggressive investigation of abandoned and active USTs at Tinker AFB began in September 1985. Eighty-eight active tanks and 38 abandoned tanks were identified and located. Most of those tanks were found in the vicinity of B3001 and in the north-central portion of the base near B201, B210, and the B290 Fuel Farm.

In coordination with the Oklahoma Corporation Commission (OCC), Tinker AFB began release investigations at 26 UST sites beginning on 31 July 1999. Tinker AFB has completed most of the investigations and has determined the nature and extent of contamination at each UST site; several of those sites are in active remediation. Currently, 15 of the sites have been closed or deactivated in accordance with OCC regulations that were in effect prior to 1 September 1996. The previous rules categorized UST sites for remediation based on generic contaminant levels in soils and groundwater. On 1 July 1996, the OCC issued new rules that classify sites for remediation based on risk to human health and the environment. The new process is referred to as the Oklahoma Risk-Based Corrective Action Program. Eleven sites are still open and are in remediation or have been recommended for case closure. In addition, two UST removals were performed in 1998, and tank closure reports were submitted to the OCC in December 1998 for each site. According to the Fiscal Year 2009 *Internal ECAMP Final Report*, Tinker AFB currently maintains 36 active USTs and 90 active ASTs (Tinker AFB 2009). Figure 3-1 shows AST and UST locations in the vicinity of the MROTC.

MROTC

According to historical topographic maps, there are no natural gas and petroleum pipelines passing through the Property. The Property does not contain USTs. A 200-gallon mobile diesel fuel AST is used to power generators; there is no secondary containment associated with the tank (Tinker AFB 2010b).

High-expansion foam, which is nontoxic and nonhazardous, is stored in 500-gallon and 1,000-gallon tanks associated with the fire suppression system in the hangars (Tinker AFB 2010b). Contents from the tanks have been released once during initial testing for each system and one other accidental time as a result of a water system inconsistency. According to Boeing, an environmental clean-up company was dispatched to capture the foam by vacuum (Tinker AFB 2010b).

No-Action Alternative Sites

The No-Action Alternative sites identified on Tinker AFB and follow the same fuels storage and management procedures as discussed previously for Tinker AFB. No ASTs or USTs occur in or adjacent to two of the No-Action sites - B2121 and B2122. One UST is located adjacent to the northwest side of B240; B2136 is located adjacent to an AST, on the southeast corner of the building, and another AST is located near but not adjacent to B2136. Two USTs and two ASTs are located within B3001; two additional ASTs are located near the west side of B3001, outside of the building. Figure 3-2 shows the locations of these ASTs and USTs in the vicinity of the No-Action Alternative sites.

3.4.2.4 Groundwater Contamination

Tinker AFB

Tinker AFB has established a basewide groundwater sampling program to obtain depth-to-water and depth-to-product measurements semiannually from approximately 1,300 monitoring wells, pumping wells, and piezometers (a small-diameter observation well used to measure groundwater pressure). The groundwater contamination characterized to date is generally limited to the base boundaries. Groundwater at Tinker AFB is evaluated and monitored in areas where solvents or other hazardous materials may have been disposed of and have impacted groundwater. Three consolidated groundwater management units (GWMU), Northwest, East and Southwest GWMUs, are located at Tinker AFB. The purposes of the GWMUs are to define areas in order to investigate and monitor groundwater for contaminants, principally solvents, metals and fuel that may come from a variety of localized sources. The sources include several Installation Restoration Program (IRP) sites and non-IRP sites at Tinker AFB. Remedies in place include pump and treat systems, monitored natural attenuation and interim controls.

Soil vapor at Tinker AFB results from the evaporation of petroleum products, solvents, or other hazardous materials remaining in the unsaturated soils found below the ground surface (above groundwater level). Vapor intrusion assessments were recently performed to assess the potential for soil vapor intrusion of subsurface contaminants volatilized from soil and/or groundwater into overlying buildings at various areas across Tinker AFB. The assessment preparers determined that the following buildings have a potential for vapor intrusion condition to exist: 200, 220, 240, 255, 267, 296, 2210, 2211, 3001, 3105, 3117, 3123, 3125, 3221, 3225, 3228, 3234, 3307, 3703, 3706, 3707, 3708, and 3761 (Tinker AFB 2011). However, the assessment concluded that vapor intrusion is likely to be a rare occurrence at Tinker AFB because of the clay-rich soils underlying most of the buildings (Tinker AFB 2011).

MROTC

Tinker AFB's East Groundwater Management Unit is immediately adjacent to the west boundary of the MROTC site (Figure 3-1).

There are six groundwater monitoring wells at the project site (Tinker AFB 2010b) (Figure 3-1). Chromium levels above maximum contaminant levels have been detected in one of the

monitoring wells located on the south portion of the MROTC property (Tinker AFB 2010b). All other constituents were non-detect except for low levels of barium, lead, and silver in samples collected at the project site; levels of arsenic, barium, chromium, and lead were detected in monitoring wells located northeast and east of the project site (Tinker AFB 2010b).

There are more than 200 monitoring wells, pumping wells, and piezometers (a small-diameter observation well used to measure groundwater pressure) within a 1-mile radius of the MROTC property (Tinker AFB 2010b). Figure 3-1 shows the locations of the monitoring wells nearest to the MROTC. Tinker AFB has established a basewide groundwater sampling program to address its IRP/ERP sites and obtain depth-to-water and depth-to-product measurements semiannually from approximately 1,300 monitoring wells, pumping wells, and piezometers. The groundwater contamination characterized to date is generally limited to the base boundaries and does not impact the project site (Tinker AFB 2010b).

No-Action Alternative Sites

The East Groundwater Management Unit encompasses B2121, B2122, and B2136, and the B3001 Groundwater IRP site covers the entire B3001 area. Figure 3-2 shows the location of groundwater management units in the vicinity of the No-Action Alternative sites.

3.4.2.5 Environmental Restoration Program and Groundwater Monitoring

Tinker AFB – Environmental Restoration Program

The Secretary of Defense established the Defense ERP in 1981 to investigate and remediate hazardous waste sites at DoD facilities. The USAF subsequently established its ERP to locate and investigate hazardous waste sites on its installations, termed Installation Restoration Program (IRP) sites. The ERP execution strategy is to protect human health and the environment, satisfy legal agreements and have all sites closed or remedies in place by the end of FY 2008 (Tinker AFB 2005b). Fully restored and remediated IRP sites present few constraints to future on-base development; however, the implementation of land use controls may be required. Land use controls are physical, legal or administrative mechanisms that restrict or limit access to contaminated property to promote beneficial land uses and to protect human health and the environment.

A total of 40 IRP sites including National Priorities List sites (operable units), landfills, industrial waste pits, fire-training areas, radioactive waste disposal sites, disposal areas, and groundwater contamination sites have been identified on Tinker AFB (Figure 3-1). Of the 40 sites in the IRP, 24 have reached site closeout with the regulating authority while the remaining 16 sites have a remedy in place (Scott Bowen, personal communication February 2011). Of these 16 remaining sites, 3 sites are within the jurisdiction of EPA Region 6 and are managed under CERCLA, and 13 sites are under the jurisdiction of the DEQ and managed under RCRA. Ten of the closed IRP sites and nine of the active IRP sites are RCRA solid waste management units. Although 24 of the IRP sites have reached site closeout, three of the RCRA sites have only completed case

closures for fuel releases from UST releases regulated by the OCC's Petroleum Storage Tank Division (Tinker AFB 2010a).

In addition to the IRP sites, 13 Compliance Restoration Program (CRP) sites are located on Tinker AFB. The CRP sites would require additional site investigations and studies before remedial responses can be proposed and implemented (Tinker AFB 2010a).

MROTC

There are no IRP/ERP sites at the MROTC; however, Landfill No. 6, covered by IRP Site #LF016, occurs southeast of the MROTC site, south of SE 59th Street (Figure 3-1).

No-Action Alternative Sites

The East Groundwater Management Unit IRP site encompasses B2121, B2122, and B2136, and the B3001 Groundwater IRP site covers the entire B3001 area. North and east of B3001 are the IWTP and Solider Creek IRP Site #OT005. No IRP sites occur in the immediate vicinity of B240. Figure 3-2 shows the location of IRP sites and groundwater management units in the vicinity of the No-Action Alternative sites.

Three IRP sites and two CRP sites are within the vicinity of the No-Action Alternative sites. The IRP and CRP sites and their status are listed in the Tinker AFB 2010 *Community Relations Plan* and are given in Table 3-6 (Tinker AFB 2010a).

Table 3-6. ERP Sites in Vicinity of the No-Action Alternative Sites

Site Type	Status
IRP Sites Located Within the Vicinity of the No-Action Alternative Sites	
OT001 B3001	RA-O with a Focused RI and Feasibility Study (RI/FS)
CG039 East GWMU	RA-O
OT005 Soldier Creek/Industrial Wastewater Treatment Plant Groundwater	NFRAP
CRP Sites Located Within the Vicinity of the No-Action Alternative Sites	
Other (OT) 062 B230	Interim Remedial Action in Place (IRA-O)
OT063 B240	Remedial Investigation (RI) as a RCRA Facility Investigation (RFI)

Source: Tinker AFB 2010a

3.5 Land Use

3.5.1 Definition of Resource

Land use comprises natural conditions or human activities at a particular location. Human-modified land use categories include residential, commercial, industrial, transportation, communications and utilities, agricultural, institutional, recreational, and other developed use areas. Management plans and zoning regulations determine the type and extents of land use

allowed in specific areas and are often intended to protect specially designated or environmentally sensitive areas. Existing land use data were collected through analysis and review of existing studies and plans. Future or planned land use information was collected through review of existing plans.

Several siting criteria have been established specific to land development and use at commercial and military airfields. To maintain safety, the USAF has established siting criteria in AFI 32-1026, *Planning and Design of Airfields*, and Air Force Manual 32-1013, *Airfield and Heliport Planning Criteria*, for land development of USAF military installations. These criteria include clear zones (CZs), obstruction zones relative to runways, and quantity-distance criteria relative to the storage of munitions. While these criteria are related to safety, they are used to assist decision makers and planners with appropriate siting of facilities on USAF installations. Federal Aviation Administration airfield criteria are used at commercial airports and are generally the same as the USAF criteria. In addition, several regulations address security requirements for military bases and have implications on physical layout and design of installations.

3.5.2 Existing Conditions

3.5.2.1 Regional Setting

Tinker AFB is in Oklahoma City, Oklahoma, southeast of the center of the city. Oklahoma City is centrally located in Oklahoma County and lies on a level plain on both sides of the North Canadian River. Tulsa is approximately 100 miles northeast of Oklahoma City, Lawton/Fort Sill is approximately 90 miles southwest, and Enid is approximately 93 miles north. Midwest City is located approximately 3 miles north of the base, and Del City is approximately 6 miles northwest of the base.

Oklahoma City

Oklahoma City includes approximately 622 square miles of residential, industrial, recreational, and retail areas and is the financial, medical, retail and business hub of central Oklahoma, providing services to more than one million people within a 100-mile radius of the city. The city is also the principal market for the state's livestock and agricultural industries and is the major wholesaling center for the area (Greater Oklahoma City Partnership 2010). A railroad yard, the former General Motors Assembly Plant (approximately 400 acres) that is now used as part of the Tinker Aerospace Complex, and other industrial uses are located between the base and I-240, which runs east to west adjacent to the Runway 35 CZ (see Section 3.6, *Safety*, for further discussion of CZs). Areas of open space are interspersed within the corridor between the base and I-240, and residential subdivisions are developed to the south of I-240, southwest of the Tinker Aerospace Complex. Lake Stanley Draper is located farther south of I-240 and consists of a nearly 3,000-acre body of water surrounded by undeveloped land. The lake is in an Environmental Conservation District and is owned by the Oklahoma City Water Trust. Minimal

commercial development is located along Douglas Boulevard outside the eastern boundary of the base. Sporadic residential development has occurred farther east of the base (Tinker AFB 2006).

ACOG developed the *2000-2030 Oklahoma City Area Regional Transportation Study* (OCARTS), which identified land uses in the Oklahoma City metropolitan area. The *Oklahoma City Plan 2000-2020 (OKC Plan)*; City of Oklahoma City 2008) was adopted by the Oklahoma Planning Commission on 28 September 2006, and was last amended on 10 December 2009. The *Southeast Sector Plan* was accepted as an amendment to the *OKC Plan* on 22 February 2007 and details city planning for the southeast sector of the City of Oklahoma City, in which Tinker AFB is located. Review of the land use plans within the *OKC Plan* and *Southeast Sector Plan* indicate Tinker AFB as a Regional Activity Center, and the following land uses are planned for areas encompassing or adjacent to Tinker AFB:

- The land containing Tinker AFB is zoned for transportation, communication, and utilities.
- Property designated as industrial is located immediately east of the base (such as the MROTC property).
- The area adjoining the southern border of the base and surrounding Lake Stanley Draper is designated for use as major open space and environmental conservation.
- The area between SE 74th Street and SE 59th Street on the southwestern boundary of the base is designated for standard industrial use.
- The area between SE 59th Street and SE 44th Street on the western boundary of the base is designated for use as urban development.

The *OKC Plan* also indicates the projected development of properties in Oklahoma City. The land immediately surrounding the eastern and western sides of Tinker AFB is designated for *urban growth*, the land to the south and southeast surrounding Lake Stanley Draper is designated as *environmental conservation* (City of Oklahoma City 2008). The urban growth areas contain recent and ongoing developments that are served by public water, sewage treatment and fire protection services, or areas where these services will be made available by 2020. Predominant uses include single-family homes, apartments of moderate densities, regional and community shopping centers, low-rise office buildings, and industrial development in selected areas. Residential densities in these areas usually exceed one dwelling per acre.

The *Southeast Sector Plan* provides a more detailed projected development of properties adjacent to Tinker AFB on the east, south, and west boundaries. Projected development in the vicinity of the MROTC is addressed in the following Section 3.5.2.2, *Tinker AFB and MROTC*.

Zoning in Oklahoma City is enforced through a zoning ordinance. The Oklahoma City Airports Zoning Ordinance establishes height restriction zones around airports and airport environs zones created by the existing and future potential noise impact. The city also restricts incompatible uses within noise zones above a 65-decibel day-night average sound level. In 2002, Oklahoma County purchased and dedicated 53 acres between I-40 and Tinker AFB to support base security and aircraft safety and noise. All homes in this area were removed.

Midwest City

Midwest City is directly north of the base and, as identified in the OCARTS, is predominantly residential with commercial land uses along major road corridors. These commercial corridors are primarily SE 15th Street, SE 29th Street, I-40, Air Depot Boulevard, and Midwest Boulevard. Public and institutional uses are scattered throughout Midwest City, including City Hall, a public library, the post office, several schools and the John Conrad Regional Golf Course. The Glenwood subdivision is between the base and Midwest City. Due to encroachment and safety concerns, Oklahoma County purchased 343 acres of the subdivision in 1973, and leased it to Tinker AFB. The land north of Runway 17, across I-40, was subsequently cleared of structures and remains undeveloped (Tinker AFB 2006).

Land use planning in this area is currently based on Midwest City's *Comprehensive Plan*, updated in 2008. Future land uses adjacent to Tinker AFB include a mix of single-family residential, commercial, town center, public/semipublic and office/retail and industrial (Midwest City 2008). Midwest City enforces the Tinker AFB Zoning Ordinance, which regulates development within Accident Potential Zone I (APZ 1) (Tinker AFB 2006).

Del City

Del City is northwest of the base and is primarily a developed, moderately dense, mixed-use community. As identified in the OCARTS, the predominant land use in Del City in the vicinity of Tinker AFB is residential, with commercial corridors along SE 15th Street, SE 29th Street, and I-40. Limited areas of industrial uses are located in Del City between I-40 and the North Canadian River (Tinker AFB 2006).

Del City maintains and enforces a conventional zoning ordinance. The ordinance includes a section entitled *Airport Zoning* that controls development within the APZ I (Tinker AFB 2006).

3.5.2.2 Tinker AFB and MROTC

Tinker AFB

Tinker AFB consists of approximately 5,460 acres of federal land southeast of downtown Oklahoma City. Land use patterns on the base have been influenced by the base's missions since World War II. Future short- and long-range development of Tinker AFB is outlined in the *Tinker AFB General Plan* (Tinker 2005b). The purpose of the *General Plan* is to determine existing and future needs and facilitate orderly future development by examining the physical composition of the base, determining existing and future space and facility needs in relation to current and future missions, and analyzing and validating development constraints and opportunities as they relate to those needs. The *General Plan* identified 13 land use categories at Tinker AFB. The land use categories with estimated acreage are depicted in Table 3-4.

Table 3-4. Existing Land Use Summary

Land Use Category	Acres
Administrative	109
Aircraft Operations and Maintenance	563
Airfield	1,021
Airfield Pavements	520
Community (Commercial)	80
Community (Services)	23
Housing (Accompanied)	182
Housing (Unaccompanied)	60
Industrial	464
Medical	27
Open Space	996
Outdoor Recreation	368
Water	17
<i>Subtotal</i>	4,430
Undesignated	603
Total	5,033

Source: Tinker AFB 2005b

Tinker AFB is divided into seven architectural/planning districts, which are areas of similar land use. The MROTC site lies outside of the Tinker AFB boundary but is near the Airfield District, which includes the runways, overruns, taxiways, aircraft parking areas, airfield clear areas, as well as aircraft operations and maintenance hangars and facilities and aircrew training facilities (Figure 3-3). Per the *General Plan*, existing on-base land uses nearest to the proposed project site include airfield, aircraft operations and maintenance, industrial, and community/institutional (Tinker AFB 2005b).

MROTC

The MROTC project site consists of 52.98 acres and is situated off Tinker AFB property, directly east of Douglas Boulevard (Figure 3-3). Adjacent off-base land uses according to the *Southeast Sector Plan* include public and institutional (Tinker AFB) to the west (see Tinker AFB discussion above for detailed adjacent Tinker AFB land uses), medium industrial to the north, and undeveloped or agricultural to the east and south (City of Oklahoma City 2007). Residential land use is located farther to the north and east of the MROTC property (City of Oklahoma City 2007) (Figure 3-3). Future land use is identified as industrial to the north, east, and west with industrial and environmental conservation areas to the south; specialized urban growth is identified farther east of the MROTC (City of Oklahoma City 2007). The MROTC is specifically identified in the *Southeast Sector Plan* as a major military and commercial aircraft facility, and the industrial land use designation was expanded to include the area contiguous with the MROTC east of Tinker AFB to Post Road.

No-Action Alternative Sites

The on-base No-Action Alternative sites all exist within airfield or aircraft operations and maintenance land use areas. Airfield (runway/taxiway/aircraft apron), administration, and industrial land uses are adjacent to these sites (Figure 3-3).

3.6 Safety

3.6.1 Definition of Resource

The primary safety concern with regard to military aircraft activity is the potential for aircraft mishaps (i.e., crashes), which may be caused by mid-air collisions with other aircraft or objects, weather difficulties, or on-ground collisions between aircraft.

3.6.2 Existing Conditions

3.6.2.1 Tinker AFB Runway Protection Zones

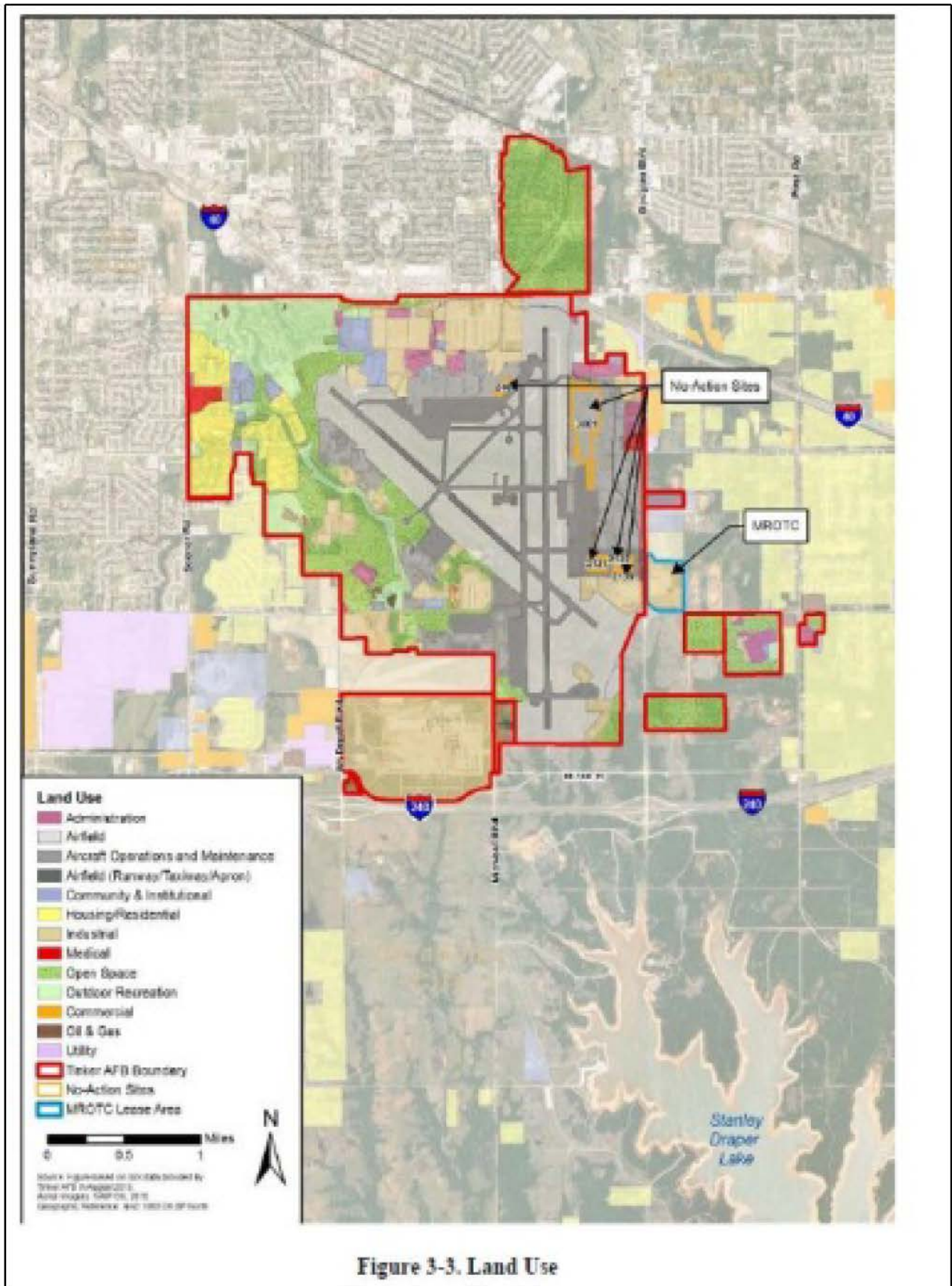
APZs and CZs are rectangular zones extending outward from the ends of active military airfields that delineate those areas recognized as having the greatest risk of aircraft mishaps, most of which occur during takeoff or landing. Three zones are identified for each runway: CZ, APZ I, and APZ II (Figure 3-4). Each end of Runways 17/35 and 12/30 at Tinker AFB have a 3,000-foot-by-3,000-foot CZ, a 3,000-foot-by-5,000-foot APZ I, and a 3,000-foot-by-7,000-foot APZ II (Tinker AFB 2006). The MROTC is not located in either CZs or APZs for Runways 17/35 or 12/30 at Tinker AFB (Figure 3-4). The MROTC is more than 3,000 feet from the center line of the runway.

Clear Zones

The CZ has the highest accident potential of the three zones, as 27 percent of accidents studied occurred in this area. As stated previously, it is USAF policy to request that Congress authorize and appropriate funds to purchase the real property interests in this area to prevent incompatible land uses. Currently at Tinker AFB, all land use with CZs would be considered compatible (Tinker AFB 2006).

Accident Potential Zones I and II

APZ I is an area that possesses somewhat less accident potential than the CZ, with 10 percent of the accidents studied occurring in this zone. APZ II has less accident potential than APZ I, with 6 percent of the accidents studied occurring in this zone. Although the potential for aircraft accidents in APZs I and II does not warrant land acquisition by the USAF, land use planning and controls are strongly encouraged in these areas for the protection of the public (Tinker AFB 2006).



APZ I is 3,000 feet wide by 5,000 feet long and has land use compatibility guidelines that are sufficiently flexible to allow reasonable economic use of the land, such as industrial/manufacturing, transportation, communication/utilities, wholesale trade, open space, recreation, and agriculture. APZ II is 3,000 feet wide by 7,000 feet long, extending 15,000 feet from the runway threshold. Acceptable uses include those of APZ I, as well as low-density, single-family residential and those personal and business services and commercial/retail trade uses of low-intensity or scale of operation. High-density functions such as multistory buildings, places of assembly (e.g., theaters, churches, schools, restaurants), and high-density office uses are not considered appropriate (Tinker AFB 2006).

Incompatible land use is currently established within APZs associated with the airfield at Tinker AFB and is summarized in Table 3-5. APZs I and II located off Runways 17/35 and 12/30 contain commercial and sensitive receptors (i.e., residences, schools, libraries, etc.).

Table 3-5. Acres of Incompatible Land Use within Clear Zones, Accident Potential Zones I and II Associated with Runways 12/30 and 17/35

Land Use	Acres of Incompatible Land Use		
	CZ	APZ I	APZ II
Residential	0	4	408
Commercial	0	41	0
Industrial	0	0	0
Public/Quasi-Public	0	4	121
Recreational/Open Space/Agricultural/Low Density	0	0	0
Total	0	49	529

Source: Tinker AFB 2006

3.6.2.2 Operations at MROTC

The 76 AMXG operations at the MROTC are conducted following various USAF and Boeing safety protocols. One such protocol is that all aircraft assigned to the MROTC must be defueled and made hangar safe (purged and cleaned of fuel and fuel additives). Although the MROTC is capable of accommodating fueled aircraft, for safety reasons the facility only operates on hangar-safe aircraft, including easing the potential response burden on emergency responders.

The buildings at MROTC were constructed in 2007 or later, so fire detection and suppression systems are relatively new. In the event of fire or emergency events at the MROTC facility, the Oklahoma City Fire Department Station No. 13, located at SE 74th Street and Air Depot Boulevard (south of the TACX), is the primary first responder (Tinker AFB 2010a). Tinker AFB fire and emergency response services currently serve as a secondary responder to such events at the MROTC. Given the configuration of gates on Tinker AFB and size of response vehicles, smaller response trucks are generally dispatched by the Tinker AFB fire department to respond to events at MROTC, as they are able to maneuver through the gates nearest the MROTC. If larger crash trucks are required, they are able to exit the base via larger gates on the north side of base and access the MROTC via Douglas Avenue and the manned gate at MROTC.

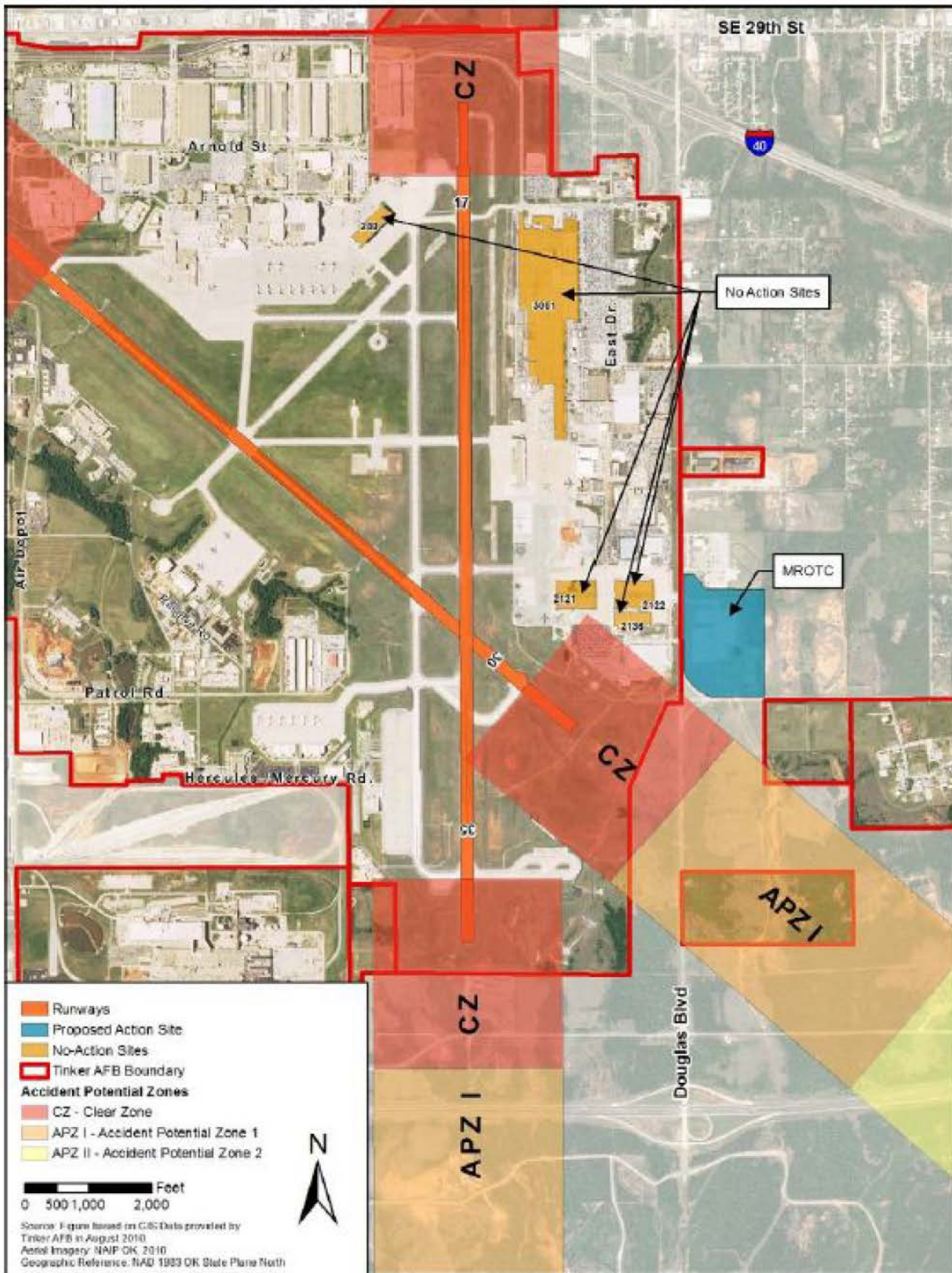


Figure 3-4 Accident Zones

Currently, a fire suppression system consisting of aqueous-film-forming foam is installed at the MROTC facilities. The high-expansion foam used in this system is a nonhazardous and nontoxic material. This system is periodically tested for proper operation and maintenance. Following discharge of the fire suppression system, the high-expansion foam is contained within the hangars; a containment company is brought in to clean up the foam. In the past, booms have been placed along the outside of the building to catch any runoff water that was dispersed as part of the fire suppression system.

Safety is a concern during the transport of aircraft across Douglas Boulevard between Tinker AFB and the MROTC. Currently, Douglas Boulevard is temporarily closed approximately 36 times per year by the Oklahoma City Police during towing activities. Such road closures may create safety concerns resulting from traffic congestion. Long-term plans for the proposed project vicinity (not included as part of the Proposed Action) include the potential eventual closure of Douglas Boulevard, construction of a new taxiway across Douglas Boulevard, and realignment of the road as an internal base road (Tinker AFB 2005b). Such development would assist in reducing impacts to safety, security, and traffic resulting from operations between the MROTC and Tinker AFB.

With respect to antiterrorism/force protection (AT/FP) concerns, the MROTC, although not within Tinker AFB boundaries, currently meets Tinker AFB security requirements and additional AT/FP considerations are not required. The MROTC has its own entry and exit point and security guards to supervise the access gate 24 hours per day (Tinker AFB 2010a).

3.6.2.3 No-Action Alternative Sites

The on-base No-Action Alternative sites are located on Tinker AFB. None of the No-Action Alternative sites are within any APZs or CZs, and all sites are more than 850 feet from the center line of the runway (Figure 3-4).

3.7 Socioeconomics

3.7.1 Definition of Resource

Socioeconomics can generally be described as the interrelationship between the basic attributes and resources associated with the human environment, particularly population and economic activity. Human population is affected by regional birth rates, death rates, and overall migration. Economic activity includes factors related to the supply of and demand for goods and services, such as employment, personal income, and commercial and industrial growth. Impacts to these two fundamental socioeconomic indicators can influence other socioeconomic components such as housing availability and the provision of public services. Socioeconomic data in this section are presented for the region to provide a brief summary of the general socioeconomics of the area surrounding the Proposed Action site.

3.7.2 Existing Conditions

3.7.2.1 Regional Setting

Population

The Proposed Action site is in Oklahoma County, in the southeastern portion of Oklahoma City. The adjacent municipalities of Midwest City and Del City lie to the north and northwest of the Tinker AFB boundary and the Proposed Action site. To provide a general idea of the population surrounding Tinker AFB and the Proposed Action site, demographics for these three adjacent municipalities are provided in Table 3-6 and are compared to county- and state-level data.

Table 3-6. Total Population: 2000-2008

Geographic Area	Census 2000	Estimated 2008	Population Change (2000-2008)
Oklahoma City	506,132	544,157	7.5%
Midwest City	54,088	53,674	-0.8%
Del City	22,128	22,446	1.4%
Oklahoma County	660,448	699,440	5.9%
Oklahoma	3,450,654	3,606,200	4.5%

Source: US Census Bureau 2000, 2008

Employment

According to the US Bureau of Labor Statistics (BLS), the total labor force for Midwest City and Del City decreased by 2.5 percent and 6.9 percent, respectively, between 2000 and 2009 (Table 3-7). By comparison, the total labor force for Oklahoma City increased approximately 2.1 percent over the same time period, as did Oklahoma County (0.8 percent) and the state (6.9 percent) (BLS 2010).

Table 3-7. Total Labor Force: 2000-2009

Geographic Area	2000	2009	Change (2000-2009)
Oklahoma City	252,689	258,079	2.1%
Midwest City	25,890	25,245	-2.5%
Del City	10,205	9,503	-6.9%
Oklahoma County	326,774	329,243	0.8%
Oklahoma ¹	1,659,005	1,773,579	6.9%

Source: BLS 2010

Note: ¹ Data for state of Oklahoma were derived from the average total labor force for each month of the year. All data for other geographic areas were obtained using annual values provided by the BLS.

The USAF is a major contributor to the economy of Oklahoma City. The top five employers in the Oklahoma City area include State of Oklahoma, Tinker AFB, Oklahoma University – Norman Campus, INTEGRIS Health, and the Federal Aviation Administration’s Mike Monroney Aeronautical Center (Greater Oklahoma City Chamber of Commerce 2010). For the employed population of Oklahoma County, approximately 16 percent are employed by the government (US Census Bureau 2008).

Unemployment

BLS data for the Proposed Action area show an increase in unemployment rate from 2006 to 2010 (BLS 2010). Increases were experienced in Oklahoma City, Midwest City, Del City, Oklahoma County, and the state of Oklahoma during this time period (Table 3-8).

Table 3-8. Unemployment: September 2006 to September 2010

Geographic Area	Work Force			Unemployment Rate		
	September 2006	September 2008	September 2010 ¹	September 2006	September 2008	September 2010 ¹
Oklahoma City ²	259,298	255,525	256,533	4.3	3.5	6.1
Midwest City ²	26,268	24,814	25,207	4.2	4.0	7.1
Del City ²	9,812	9,385	9,469	4.9	4.2	7.3
Oklahoma County ²	331,458	325,685	327,380	4.1	3.7	6.4
Oklahoma ³	1,731,552	1,754,940	1,756,589	4.2	3.8	6.9

Source: BLS 2010

Notes:

¹ Preliminary data

² Not seasonally adjusted

³ Seasonally adjusted

3.7.2.2 Tinker AFB and MROTC

Tinker AFB

Currently, with approximately 27,000 military and civilian employees, Tinker AFB is the largest single-site employer in Oklahoma (Tinker AFB 2010c). The installation has an annual statewide economic impact of \$3.4 billion, creating an estimated 30,865 secondary jobs (Tinker AFB 2010c).

MROTC

The 76 AMXG is one of five groups in the 76 MXW. The 76 AMXG comprises 2,600 military and civilian personnel who manage and conduct depot-level maintenance, repair, modification, overhaul, functional check flights and reclamation of various aircraft at Tinker AFB (Tinker AFB 2010d). This group also conducts depot support operations on aircraft, aircraft engines, and component parts for the USAF, US Navy, and US Air National Guard (Tinker AFB 2010d). Aircraft modification activities at the MROTC currently employ 75 personnel.

No-Action Alternative Sites

The No-Action Alternative sites identified thus far are located on Tinker AFB; please refer to Section 3.7.2.1 for Tinker AFB.

3.8 Transportation and Circulation

3.8.1 Definition of Resource

Transportation and circulation refer to the movement of vehicles and pedestrians throughout a road and highway network. Under highway functional classification guidance by Oklahoma Department of Transportation Planning and Research Division, principal arterials are interstates, other freeways, expressways and other principal arterials that serve major traffic movements, provide continuity for rural arterials, and operate under full, partial, or uncontrolled access. Minor arterial roads provide a lower level of mobility than principal arterials and serve moderate-length trips. Other roadway facilities are collector street systems and local street systems that provide higher access and lower traffic mobility.

3.8.2 Existing Conditions

3.8.2.1 Regional and Local Circulation

Tinker AFB is within the city limits of Oklahoma City, approximately 9 miles southeast of downtown by surface roads. Oklahoma City is served by a network of interstates and local and regional arterial roads. Four interstates, I-40, I-35, I-240 and I-44, pass through Oklahoma City and provide regional access to the base.

Three arterial roads, Sooner Road, SE 29th Street, and Douglas Boulevard, and two interstates, I-40 and I-240, provide access to Tinker AFB. Sooner Road is a north-south, four-lane arterial that forms part of the western border of the base. SE 29th Street is an east-west arterial that— together with I-40—forms the northern boundary of the base. SE 29th Street is recognized as having east-west section-line roads with some of the highest traffic volumes in the Southeast Sector (City of Oklahoma City 2007). Douglas Boulevard is a four-lane, north-south arterial that forms the eastern boundary of the base and provides access to the base through the Lancer Gate. I-40 runs along the northern boundary of the base and provides access to the base via Air Depot Boulevard/Tinker Gate and Eaker Gate. I-240, an east-west arterial south of the base, provides access to the base by Sooner Road (via Vance Gate), Air Depot Boulevard (Gott Gate), and Douglas Boulevard (Figure 3-5).

3.8.2.2 Circulation at Tinker AFB and MROTC

Tinker AFB

A network of arterial, collector, and local roads serves Tinker AFB. A system of local roads supports the majority of the traffic on the base. Air Depot Boulevard, East Drive, Arnold Avenue

and Patrol Road are the major collector roads, which are supported by a network of minor collector road and local streets. McNarney Avenue, Reserve Road, and Mitchell Avenue are the primary local roads. Douglas Avenue is a four-lane north-south arterial that forms the eastern boundary of the base and is located on the western side of the MROTC facility.

Thirteen gates are located on the perimeter of Tinker AFB. Eaker Gate, Hruskocy Gate, and Truck Gate are open 24 hours per day, seven days per week (Tinker AFB 2010e). Tinker Gate and Lancer Gate are temporarily closed due to construction (as of August 2010 [Tinker AFB 2010e]). The nearest open gates to the proposed project location are Marauder Gate and Liberator Gate, along Douglas Boulevard (Figure 3-5).

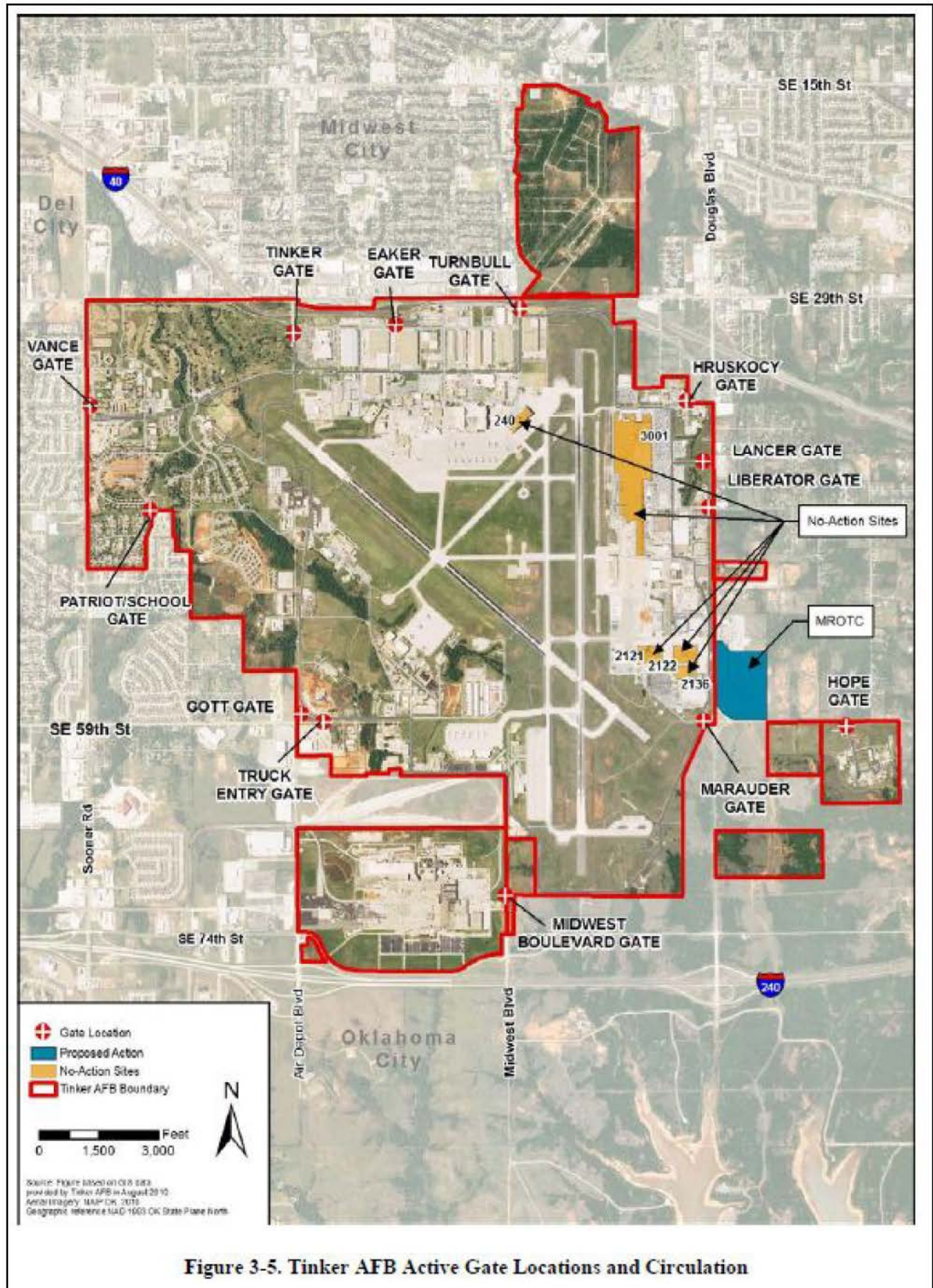
MROTC

Although the MROTC borders Tinker AFB, aircraft transportation to and from the facility requires towing across Douglas Boulevard, a public roadway. Tinker AFB staff work closely with the Oklahoma City Police Department to schedule and tow aircraft between MROTC and base, which includes temporary closures of Douglas Road. The Oklahoma City Police Department is informed one week to several days ahead of time prior to aircraft towing. The Oklahoma City Police Department is responsible for notifying area first responders (e.g., Oklahoma City Fire Department, hospitals, and medical centers) of the planned road closures. The temporary closure of Douglas Road for aircraft towing occurs approximately 36 times per year. Aircraft towing is currently allowed to occur during daytime hours, beginning at 0900 hours. Each aircraft tow across Douglas Boulevard lasts approximately 10 minutes. Immediately prior to towing activities, the Oklahoma City Police Department, Tinker AFB, and Boeing staff meet for a briefing on the planned towing and to ensure all parties are prepared prior to closure of Douglas Road. Aircraft are pre-positioned at the ALC gate (which is located along the airfield apron perimeter on base) and all staff prepared to tow prior to road closure; in this way, traffic disruption is minimized by streamlining the tow process. To prepare for towing, on-base portions of Warehouse Road are closed by Tinker AFB security, and a series of three gates (ALC gate, a base perimeter gate, and MROTC gate) are opened and used as a portal for aircraft transport.

The existing parking lot at MROTC includes 156 parking spots. A small insulated shed is located at the security gate at the north end of the parking lot to restrict access to the hangars and aircraft operations ramp area.

No-Action Alternative Sites

The No-Action Alternative sites identified thus far are located on Tinker AFB. The nearest open gates to B240 are Turnbull and Eaker gates; B3001 is near Hruskocy and Liberator gates; B2121, B2122, and B2136 are located near Marauder Gate (Figure 3-5).



3.9 Utilities and Infrastructure

3.9.1 Definition of Resource

Utilities are basic services such as gas, electricity, water, sewer, and solid waste disposal that are delivered by public and private service providers. Infrastructure is the means of delivery for utilities and may include such systems as gas pipelines, electricity grids, water distribution systems, sewer collection systems, and solid waste disposal systems. The infrastructure systems of utilities typically have a finite capacity based upon system reliability and level of use.

3.9.2 Regional Setting

3.9.2.1 Tinker AFB

Communications

The communication distribution system at Tinker is provided through copper cable and fiber optic cable networks, both located in underground conduit (Tinker AFB 2005b). Data systems at Tinker AFB are divided into an unclassified network and a classified network.

Electricity and Natural Gas

Oklahoma Gas and Electric Company (OG&E) supplies electrical power to Tinker AFB through a looped 138-kilovolt transmission line (Tinker AFB 2005b). The electrical distribution system consists of overhead lines with pole-mounted transformers and underground lines with pad-mounted transformers. Tinker AFB also utilizes numerous generators on base to provide backup power to key buildings, as well as an isolated secondary power source provided by an OGE-owned 80-megawatt peaking plant and standby generator (Tinker AFB 2005b).

Tinker AFB purchases natural gas through a government-wide supply contract administered by the Defense Energy Supply Center. OG&E delivers natural gas to Tinker AFB at three metered delivery points (Tinker AFB 2005b).

Potable Water

The primary drinking water supply source for Tinker AFB is a system of wells on Tinker AFB. There are 22 operational wells that obtain water from the Garber-Wellington Aquifer, which is part of the larger Central Oklahoma Aquifer. The wells operate at approximately 75 percent of rated capacity, supplying approximately 6.5 million gallons per day (Tinker AFB 2005b). A secondary drinking water source is provided by the Oklahoma City Water Department, via two metered connections, that supplies approximately 2 million gallons per day (Tinker AFB 2005b).

Tinker AFB's water supply is treated primarily by chlorination and fluoridation, either at the individual well site or through a central chlorination station (B774) on Tinker AFB (Tinker AFB 2005b). B6620 and B800 also add fluoride to water that is supplied to the family housing area. Water purchased from Oklahoma City is chlorinated and fluoridated prior to delivery to Tinker AFB (Tinker AFB 2005b).

The water distribution system at Tinker AFB utilizes five elevated steel tanks to provide increased capacity to meet seasonal or firefighting demands, as well as to maintain distribution system pressure. The total elevated water storage capacity is 3 million gallons. The water distribution system itself is almost entirely decentralized and includes asbestos cement, cast iron, and polyvinyl chloride (PVC) pipe. Cast iron and asbestos cement water lines were initially installed in 1943; PVC water lines were installed as recently as 2001 (Tinker AFB 2005b).

Wastewater

Tinker AFB no longer operates a wastewater treatment plant. Base wastewater collection system is connected to the Oklahoma City wastewater system through a line that runs from the industrial waste-water treatment plant to the western side of the base (Tinker AFB 2005b). The majority of the wastewater collection system was constructed in 1943 and utilizes gravity-fed sewer line system. Forty-six sanitary wastewater lift stations and associated force mains are located throughout the main Tinker AFB area to maintain adequate pressure and flow through the sewer lines.

Tinker AFB operates an industrial wastewater system to collect wastewater from industrial facilities and activities and treatment prior to discharge into Oklahoma City's sanitary sewer system. Industrial waste includes oil, grease, and other contaminants that collect into aqueous streams (e.g., contents from chemical cleaning line processes). The industrial wastewater treatment plant receives and treats approximately 900,000 gallons per day of wastewater before releasing it into the Oklahoma City municipal wastewater treatment plant (Tinker AFB 2005b). Currently, the residual oily sludge from the industrial wastewater treatment processes is not filtered and is disposed of as hazardous waste.

Stormwater

Tinker AFB utilizes a combination of natural and constructed features (e.g., gutters, culverts, pipes) to convey stormwater through the stormwater drainage system. Crutch Creek and the South Forty District are the primary receiving features of stormwater runoff. The South Forty District has natural and constructed retention areas to control runoff and flooding.

Tinker AFB's OC-ALC Plan 19-2, *Spill Prevention and Emergency Response Plan for Hazardous and Extremely Hazardous Material and Spill Prevention Control and Countermeasures Plan* (Tinker AFB 2004), presents specific procedures for preparing for and responding to inadvertent discharges of oil or releases of hazardous substances at the base. In 2002, Tinker AFB developed a SWPPP to comply with the conditions of the Multi-Section General Permit for Storm Water Discharges Associated with Industrial Activities (Permit Number GP-00-01) (Tinker AFB 2002b). The SWPPP is noted as a supporting plan in OC-ALC Plan 19-2. The SWPPP provides basewide and facility-specific best management practice (BMPs) to reduce pollutants in stormwater discharges from the base. The BMPs for Tinker AFB include the following:

- Source controls
- Management practices

- Preventive maintenance
- Spill prevention and response
- Erosion and sediment controls
- Identification of stormwater pollution prevention personnel

Solid Waste

Solid waste generated on Tinker AFB is handled basewide by a private contractor, Waste Management, Inc. The contractor is responsible for pickup and disposal of conventional solid waste generated by routine activities on base. Construction and demolition debris are not included in the pickup. Yard waste is kept separate at its origin/collection point and is hauled to a site on the southern side of Tinker AFB for composting. Tinker AFB also operates a Defense Reutilization and Marketing Office to accept materials for reuse, transfer, donation, or sale, as well as recyclable materials such as scrap metal and automotive and aircraft tires (Tinker AFB 2005b). A separate recycling program for office and household wastes is operated on Tinker AFB to further reduce the solid waste stream generated on base.

3.9.2.2 MROTC

Communications

Currently, a Boeing commercial internet service is available at the MROTC. Tinker AFB staff have installed a wireless system using the existing Boeing service lines to connect to Tinker AFB base proper. In this way, access to maintenance systems, including scheduling, timekeeping, material, production, email, or share-all systems used by Tinker AFB is available at the MROTC.

Electricity and Natural Gas

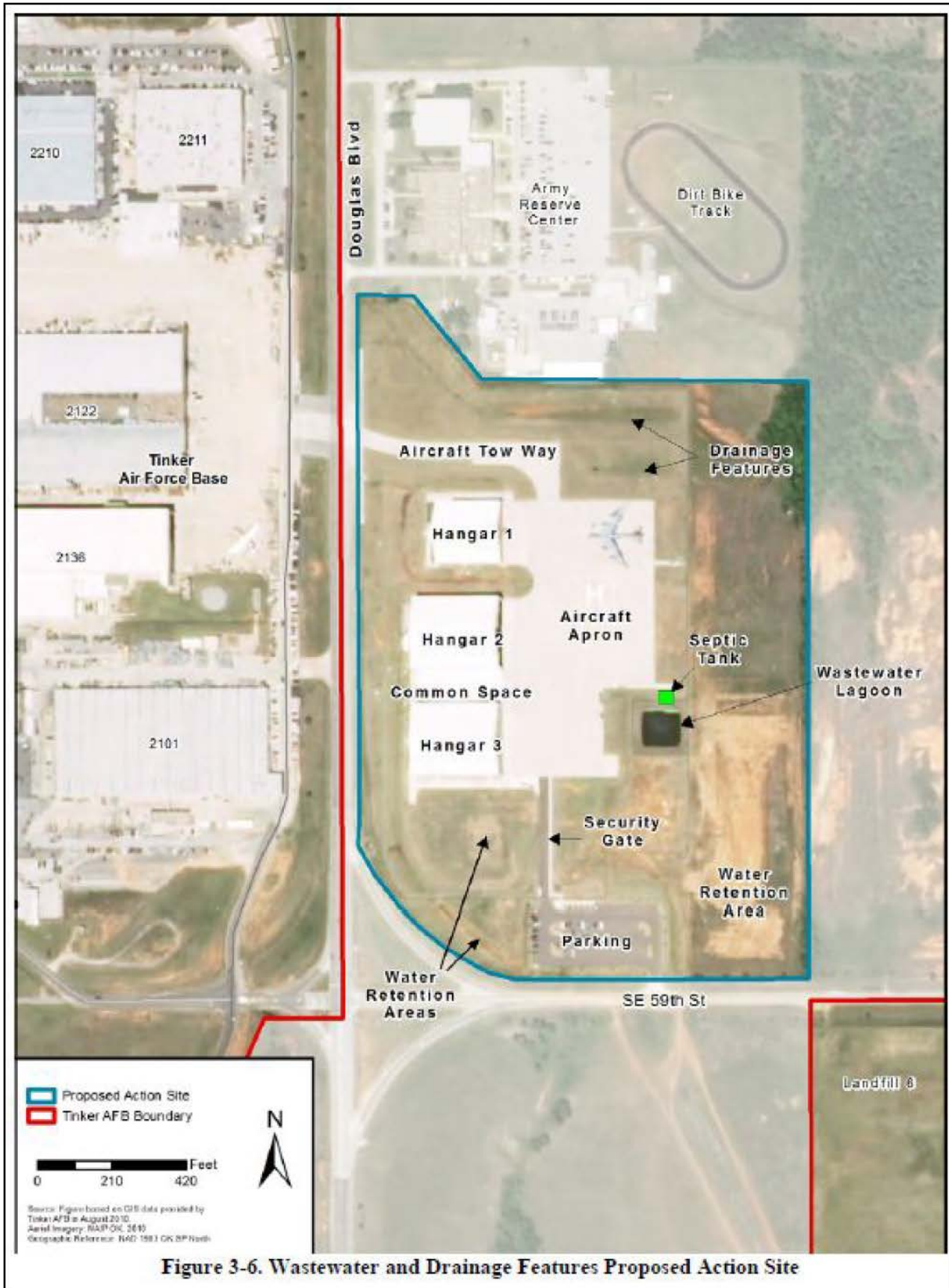
According to historical topographic maps, there are no known natural gas or petroleum pipelines passing through/under the MROTC property. Four transformers owned by OG&E are located on the MROTC property (Tinker AFB 2010b).

Potable Water

Drinking water for the MROTC is provided by the Oklahoma City municipal water supply and is obtained through a utility corridor on Douglas Boulevard (Tinker AFB 2010b). Oklahoma City's drinking water is tested 12 times per day for contaminants such as fluoride, lead, barium, copper, arsenic, nitrate, coliform bacteria, turbidity, total organic carbon, and byproducts from disinfectants. The 2009 annual water quality report indicates that no problems were identified and results were in compliance with all regulatory standards (City of Oklahoma City 2009).

Wastewater

Wastewater is generated from sanitary processes associated with the administrative/office areas of the MROTC, including restrooms and hand-washing stations. No industrial wastewater is generated at the MROTC. Wastewater generated from sanitary process streams are discharged to a septic system and wastewater lagoon on the MROTC property (Figure 3-6). This system



consists of a 1,350-gallon septic tank and a concrete-lined 75-foot long square wastewater lagoon with a design flow of 27,000 gallons per month (DEQ 2006, 2007; Tinker AFB 2010b). The wastewater lagoon was designed per OAC 252:641 for a flow rate of 900 gallons per day. The lagoon is 7-feet-deep and is 5,625 square feet at the bottom of the lagoon (DEQ 2007). Currently, approximately 100 personnel work at the facility; the wastewater lagoon is sized to accommodate the wastewater load of 150 people per day assuming a 6-gallon-per-day generation rate per person (DEQ 2006). Boeing is currently responsible for maintaining this system.

The DEQ Water Quality Division Industrial Permitting Section authorized the construction of the onsite sewage treatment system in 2006. Following construction, the lagoon and septic system was inspected by DEQ and received local DEQ office approval (Tinker AFB 2010b).

Stormwater

According to Boeing personnel and the DEQ Water Quality Division, the MROTC property is exempt from stormwater runoff permitting. Boeing has a “No Exposure Certification” (Certificate #WQNEC0584 in a letter dated 24 April 2008) for the property in terms of exposure of materials and activities to stormwater. As reported in an *Environmental Baseline Survey* conducted for the MROTC in 2009 (Tinker AFB 2010b):

According to the letter [No Exposure Certification letter], if conditions change resulting in the exposure of materials and activities to stormwater, the facility operator must obtain coverage under an Oklahoma Pollution Discharge Elimination System stormwater permit immediately. According to DEQ, the No Exposure Certification cannot be transferred to Tinker AFB under the long-term lease. Tinker AFB may be required to apply for a No Exposure Certificate under their long-term lease when the current certificate expires on 2 May 2011.

Solid Waste

The MROTC facilities generate solid waste in the form of trash and nonhazardous industrial wastes. Collection and disposal of these nonhazardous solid wastes is contracted to Waste Management, Inc.

3.9.2.3 No-Action Alternative Sites

Utilities at the on-base No-Action Alternative sites are described in Section 3.9.2.1.

3.10 Water Resources

3.10.1 Definition of Resource

Water resources analyzed in this EA comprise surface and groundwater resources, including the quality and availability of surface and groundwater, wetlands, and the potential for flooding. Surface water resources include lakes, rivers, and streams and are important for a variety of reasons including economic, ecological, recreational, and human health. Groundwater includes

the subsurface hydrologic resources of the physical environment and is an essential resource in many areas; groundwater is commonly used for potable water consumption, agricultural irrigation, and industrial applications. Groundwater properties are often described in terms of depth to aquifer, aquifer or well capacity, water quality, and surrounding geologic composition.

Wetlands are defined by the U.S. Army Corps of Engineers (USACE) and the EPA in 33 CFR 328.3(b) as follows:

[t]hose areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. As defined in 1984, wetlands generally include swamps, marshes, bogs, and similar areas.

Wetlands provide a variety of functions, including groundwater recharge and discharge, flood flow attenuation, sediment stabilization, sediment and toxicant retention, nutrient removal and transformation, aquatic and terrestrial diversity and abundance, and uniqueness. Three criteria are necessary to define wetlands: vegetation (hydrophytes), soils (hydric), and hydrology (frequency of flooding or soil saturation). Hydrophytic vegetation is classified by the estimated probability of occurrence in wetland versus upland (nonwetland) areas throughout its distribution. Hydric soils are those that are saturated, flooded, or ponded for sufficient periods during the growing season and that develop anaerobic conditions in their upper horizons (i.e., layers). Wetland hydrology is determined by the frequency and duration of inundation and soil saturation; permanent or periodic water inundation or soil saturation is considered a significant force in wetland establishment and proliferation. Jurisdictional wetlands are those subject to regulatory authority under Section 404 of the Clean Water Act; EO 11990, *Protection of Wetlands*, requires analyses of potential wetland impacts if they are related to proposed federal actions.

Other issues relevant to water resources include watershed areas affected by existing and potential runoff and hazards associated with 100-year floodplains. Floodplains are belts of low, level ground present on one or both sides of a stream channel and are subject to either periodic or infrequent inundation by floodwater. Inundation dangers associated with floodplains have prompted federal, state, and local legislation that limits development in these areas largely to recreation and preservation activities. EO 11988, *Floodplain Management*, requires actions to minimize flood risks and impacts. Under this order, development alternatives must be considered and building requirements must be in accordance with specific federal, state, and local floodplain regulations. DoD has implemented storm water requirements under Section 438 (42 USC §17094) of the Energy Independence and Security Act to maintain the hydrologic functions of a site and mitigate the adverse impacts of storm water runoff from DoD construction projects. Section 438 requires federal facility projects over 5,000 square feet to “maintain or restore, to the maximum extent technically feasible, the predevelopment hydrology of the property with regard to the temperature, rate, volume, and duration of flow” (DoD 2010).

3.10.2 Existing Conditions

3.10.2.1 Regional Setting

Surface Water

Oklahoma County's landforms drain into the North Canadian River, which runs west to east through the county. The northern portion of the county drains into the Crutcho Creek drainage basin and into the North Canadian River, and the southern portion drains into the Elm Creek and Hog Creek drainage basins and into the South Canadian River, both of which are headwaters for the Arkansas River. The entire county is part of the Arkansas River Basin.

Several drainage corridors traverse Oklahoma County close to Tinker AFB, including Brock Creek, East Elm Creek, Crutcho Creek, West Hog Creek, East Fork and West Fork of Wildhorse Creek, Bluff Creek, Walnut Creek, and Soldier Creek. Surface waters on Tinker occur in three primary drainage basins, one of which drains to the north (Crutcho Creek with Kuhlman and Soldier Creek tributaries) and two to the south (East Elm Creek and West Hog Creek) (Tinker AFB 2007).

Groundwater

Aquifers that underlay Oklahoma County include both ephemeral (short-lived) and perennial (year-round) aquifers. The most important source of potable groundwater in the Oklahoma City metropolitan area is the Central Oklahoma Aquifer system. This aquifer extends under much of central Oklahoma and includes water in the Garber sandstone and Wellington Formation, the overlying alluvium and terrace deposits, and the underlying Chase, Council Grove, and Admire groups. The Garber sandstone and the Wellington Formation portion of the Central Oklahoma Aquifer system are referred to commonly as the "Garber-Wellington Aquifer" and are considered to be a single aquifer because these units were deposited under similar conditions. Many of the best-producing water wells are in this zone. On a regional scale, the aquifer is confined above by the less permeable Hennessey Group and below by the Late Pennsylvanian Vanoss Group. The regional dip of these formations is generally to the west (Parkhurst et al. 1993).

Across the county, water can sometimes be found in shallow, thin, discontinuous perched zones above the aquifer. Most water from the Garber-Wellington Aquifer is of sufficient quality to be used for most industrial, agricultural, and domestic purposes.

Industrial operations, individual homes, farm irrigation, and small communities not served by a municipal distribution system with a surface water source depend on the Garber-Wellington Aquifer. Communities presently depending on surface supplies, such as Oklahoma City, Midwest City and Del City, maintain wells tapping the Garber-Wellington Aquifer as a backup water supply in the event of drought.

Wetlands

Wetlands represent about 950,000 acres (approximately 2 percent) of the land area in Oklahoma (Yuhas 1996). Several wetlands are located in Oklahoma County; the National Wetland Inventory (NWI) maps for the area indicate that these wetlands are primarily freshwater emergent, freshwater forested/shrub, freshwater pond, and riverine (US Fish and Wildlife Service [USFWS] 2011).

Floodplains

The flood hazard areas of Oklahoma County are subject to periodic inundation that results in loss of life and property, health and safety hazards, disruption of commerce and governmental services, and extraordinary public expenditures for flood protection and relief, all of which adversely affect public health, safety, and general welfare. The bulk of the Federal Emergency Management Agency's designated 100-year and 500-year floodplains for Oklahoma County exist along the North Canadian River and its major tributaries.

The Floodplain Board of Oklahoma County appoints a County Floodplain Manager who administers and implements regulations and other appropriate sections of 44 CFR 9 (National Flood Insurance Program regulations) pertaining to floodplain management. The duties and responsibilities of the floodplain board are to adopt, administer, and enforce floodplain management regulations that (a) delineate floodplains and floodways, including 100-year flood elevations, within all unincorporated areas of the county (these delineations shall be submitted to the Oklahoma Water Resources Board [OWRB]); (b) preserve the capacity of the floodplain to carry and discharge regional floods; (c) minimize flood hazards; and (d) regulate the use of land in the floodplain (OWRB 2011). Within incorporated areas of Oklahoma County, the city government is responsible for floodplain management. Floodplain management issues at Tinker AFB are within the jurisdiction of the City of Oklahoma City.

3.10.2.2 Tinker AFB and MROTC

Surface Water

Tinker AFB

Surface drainage at Tinker AFB occurs in three primary drainage basins: (1) Crutcho Creek drainage basin, (2) Elm Creek drainage basin, and (3) Hog Creek drainage basin. The majority of land associated with Tinker AFB is drained by the Crutcho Creek drainage basin, which flows to the north into the North Canadian River. The Elm Creek and Hog Creek drainage basins flow to the south of the base into the Little River, which forms a confluence with the South Canadian River (Tinker AFB 2007).

On-base, open-flowing waters total approximately 8 linear miles. The majority of base creek flows are the result of stormwater runoff, though portions of the creeks are recharged from groundwater. Stormwater runoff is collected by various diversion structures and discharged to surface streams (Tinker AFB 2007).

No significant point source industrial discharges currently are made to any waterway on Tinker AFB. In 1996, the base's industrial wastewater treatment plant and sanitary treatment plant discharges were rerouted to Oklahoma City's publicly owned treatment works. This eliminated flows of 1.3 million gallons per day to the on-base portion of Soldier Creek (i.e., East Soldier Creek) (Tinker AFB 2002a).

The southeastern quadrant of the base nearest to the MROTC lies within the watershed boundary of Crutcho Creek and Soldier Creek (Tinker AFB 2007) (Figure 3-7).

MROTC

According to topographical maps and aerial photographs, there is one drainage area on the north side of the MROTC property (Figure 3-6) (Tinker AFB 2010b). Surface water runoff on the northern side of the MROTC property discharges into this drainage, which then flows into a tributary of Soldier Creek to the east (Figure 3-6). On the southern side of the MROTC property, surface water runoff discharges into a retention basin on the southern side of the MROTC property (Figure 3-6); the retention basin outlets to a tributary that flows into Stanley Draper Lake to the south.

No-Action Alternative Sites

There are no surface water features in the immediate vicinity of the on-base No-Action Alternative sites. Soldier Creek is approximately 1,000 feet east of B3001 (Figure 3-7). Crutcho Creek is approximately 2,500 feet west of B2121 (Figure 3-7). All identified No-Action Alternative sites lie within the watershed boundary of Crutcho Creek and Soldier Creek on Tinker AFB (Tinker AFB 2007) (Figure 3-7).

Groundwater

Tinker AFB

The primary subsurface water zones identified at Tinker AFB include the Hennessey water-bearing zone, the upper saturated zone (formerly the "perched" zone), the lower saturated zone (formerly the "top of regional" and "regional" aquifers), and the producing zone. Tinker AFB is located in a recharge area for these water-bearing zones; groundwater is derived primarily from precipitation and from infiltration of surface streams.

Tinker AFB lies within the recharge area of the Garber-Wellington Aquifer. Regional groundwater flow under Tinker AFB ranges in direction from west/northwest to southwest, depending on location, and has a gradient between 10 to 30 feet per mile (Christenson et al. 1992). The Hennessey water-bearing zone overlies this aquifer in the southwestern portion of the base but is not part of the Garber-Wellington Aquifer. Groundwater at Tinker AFB is found under either water table or in confined conditions. The depth to water ranges from a few feet to about 70 feet depending on the local topography. Across Tinker AFB, water can sometimes be found in shallow, thin, discontinuous perched zones above the aquifer. However, on Tinker AFB some contaminated groundwater plumes do exist, typically at a depth of 175 feet or shallower.

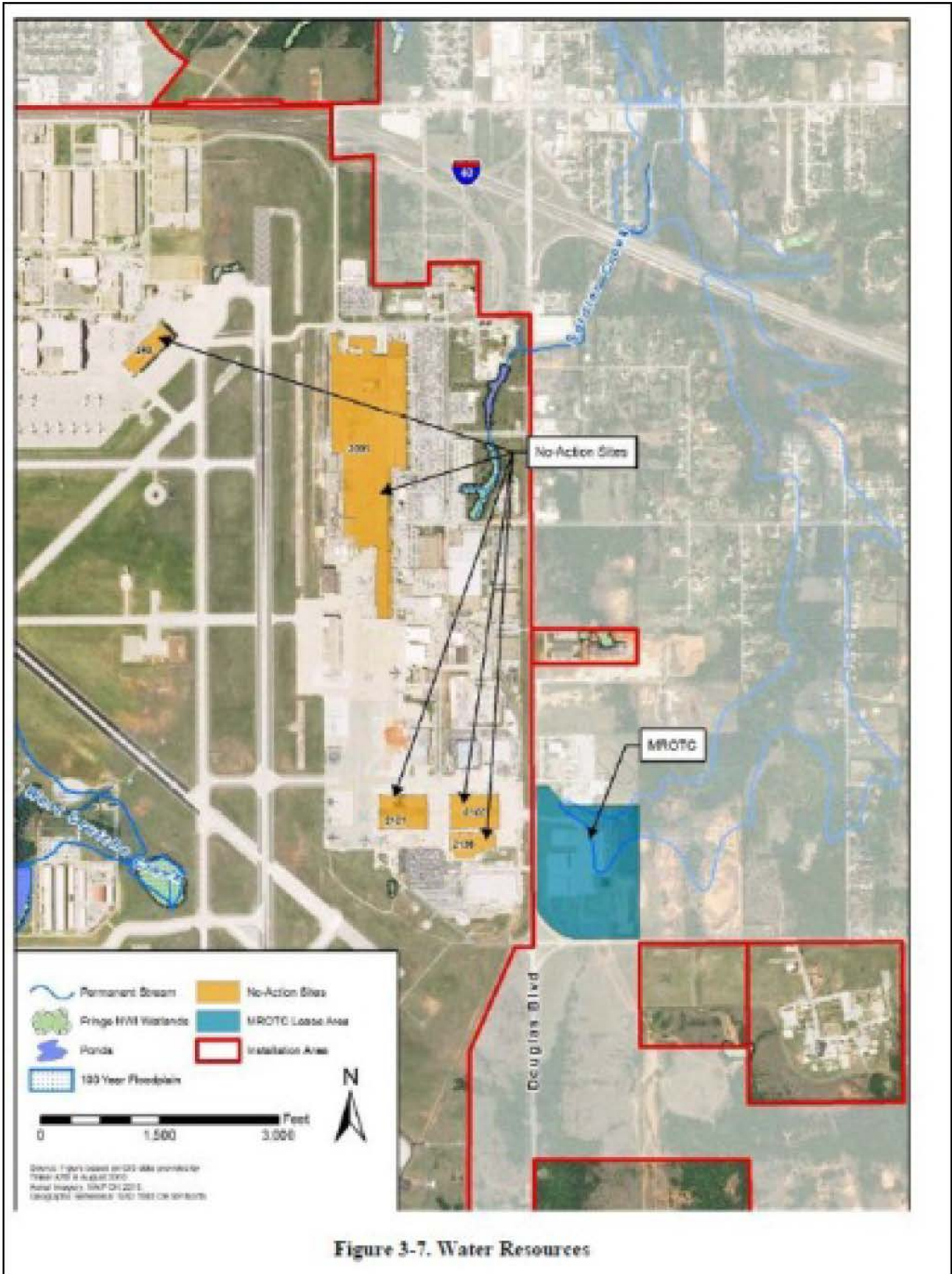


Figure 3-7. Water Resources

These plumes do not pose health concerns at this time since the producing zone at Tinker AFB (i.e., depth at which water from supply wells is obtained) is 200 feet or deeper. Also, there appears to be an aquitard, or hydraulically confining lithologic layer, at approximately 200 feet, which hydraulically separates the producing zone from shallower groundwater in the aquifer at Tinker (Tinker AFB 2007). There are more than 200 monitoring wells, production wells, and piezometers within a 1-mile radius of the MROTC property that were installed as part of Tinker AFB ERP monitoring (see Section 3.4, *Hazardous Materials and Wastes*, for a description of the ERP program; see also Figure 3-2.)

The approximate direction of groundwater flow in the Garber-Wellington Aquifer is south and southwest across the southern half of the base and west to northwest across the northern half. Shallow groundwater may discharge to surface streams or be recharged by streams. Both situations occur at Tinker AFB along Crutch Creek and Soldier Creek. In contrast, water in the Hennessey water-bearing zone generally flows to the northeast toward Upper Crutch Creek from higher topographic areas along the southern boundary of the base (Tinker AFB 2007). However, some water from the Hennessey water-bearing zone flows northwesterly into the main branch of Crutch Creek. Additionally, much of the water in this zone enters Tinker AFB from the west under Sooner Road (off the Oklahoma City Anticline) and flows eastward to Crutch Creek. On Tinker, several other stream segments are also recharged by this groundwater and flow is generally semiradial.

MROTC

The MROTC is also situated within the Garber-Wellington Aquifer. Groundwater in the shallow aquifer beneath the MROTC flows to the west (Tinker AFB 2010b). As discussed in Section 3.4, *Hazardous Materials and Wastes*, there are numerous monitoring wells, production wells, and piezometers within a 1-mile radius of the MROTC that were installed as part of Tinker AFB ERP monitoring (Figure 3-2).

No-Action Alternative Sites

Groundwater resources in the vicinity of the on-base No-Action Alternative sites are described in Section 3.10.2.2.

Wetlands

Tinker AFB

In 1995, approximately 65 acres of wetlands were identified on Tinker AFB by the USFWS using NWI criteria; these wetlands included creeks, ponds, drainage swales, and other wet areas (Tinker AFB 2007). Of the 65 acres, 7.9 acres were later classified by the USACE as jurisdictional wetlands under the Clean Water Act. In 2002, the 65 acres of wetlands (73 wetland areas) were reassessed to track their status and trend (Tinker AFB 2007). Based on the survey, only two wetlands (i.e., Urban Greenway Multiuse Trail and Prairie Pond) were classified as high-quality wetlands. Thirty-four were classified as intermediate quality, and six as low quality. This study also determined that 31 of the original 73 NWI wetland areas no longer existed or were actually drainage ditches or wet-weather conveyances that did not function as wetlands or

aquatic habitat and therefore were not included in the survey. These nonwetland areas covered approximately 27 acres, and most were within the airfield or other highly industrialized areas of the base. Therefore, the current total NWI acreage on Tinker is estimated at 38 acres. As of 2007, these had not been officially “delisted” as wetlands by the USFWS, which conducted the original study (Tinker AFB 2007).

The nearest wetlands to the MROTC property on Tinker AFB are fringe wetlands located approximately 1,800 feet west of the MROTC, near the western side of Southwest 59th Street, south of B2121 (Figure 3-7). Other fringe wetlands occur approximately 2,000 feet north of the MROTC and approximately 1,700 feet southeast of the MROTC near the Landfill No. 6 site (Figure 3-7) Based on data from the *Integrated Natural Resources Management Plan* (Tinker AFB 2007) and geospatial data provided by Tinker AFB, no wetland areas exist on Tinker AFB adjacent to the MROTC property.

MROTC

According to the NWI survey and a *Biological Resources Technical Report* prepared in 2002, there are no designated wetlands on the MROTC (Figure 3-7) (Parsons 2002).

No-Action Alternative Sites

No wetlands occur adjacent to the No-Action Alternative. However, several fringe wetlands occur in the vicinity of these sites, including B240, approximately 850 feet northeast; B2121, approximately 500 feet south, and therefore approximately 700 feet west of B2136; and B3001, approximately 700 feet at its nearest proximity. Figure 3-7 indicates the locations of these unnamed fringe wetlands to the identified No-Action Alternative sites.

Floodplains

Tinker AFB

In October 2002, USACE-Southwestern Division-Tulsa District, completed a study for USAF to update the 100-year and 500-year floodplains at Tinker AFB. The 100-year and 500-year floodplains were reassessed for the Middle Branch, Upper Crutcho Creek (the Eastern Branch), and Upper Crutcho Creek (Western Branch) (USACE 2002). Crutcho Creek, its tributaries, and Kuhlman Creek are bounded by 100-year and 500-year floodplains. These floodplains affect approximately 121 acres of base area. The bulk of these floodplains are located along Crutcho Creek.

In general, Tinker AFB’s 100-year floodplain function is poor. However, conversion of some floodplain improved and semi-improved grounds to natural areas in recent years has helped to improve the functions of these areas. Although no specific monitoring of floodplain functions has been accomplished in the past, projects are scheduled to provide the foundational data for measuring progress towards development of healthy floodplains on Tinker AFB (Tinker AFB 2007).

On Tinker AFB, the Crutcho Creek floodplain is the nearest floodplain to the MROTC property, located approximately 4,500 feet west of the western MROTC boundary (Tinker AFB 2007) (Figure 3-7).

MROTC

According to Federal Emergency Management Agency insurance maps, approximately 11 acres of the MROTC property are within the 100-year floodplain for a tributary to Soldier Creek (Figure 3-7). The floodplain boundary is shown in Figure 3-7; no existing structures are within the floodplain boundary.

No-Action Alternative Sites

No floodplains exist adjacent to the No-Action Alternatives sites (Figure 3-7). The nearest floodplains to these sites are a tributary to Soldier Creek, approximately 700 feet to the east at its nearest proximity to B2122, and the Crutcho Creek floodplain, located approximately 2,400 feet west-southwest from B2121 (Figure 3-7).

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SECTION 4.0 ENVIRONMENTAL CONSEQUENCES

4.1 Air Quality

4.1.1 Approach to Analysis

The 1990 CAAA require that federal agency activities conform to the SIP with respect to achieving and maintaining attainment of NAAQS and addressing air quality impacts. The EPA General Conformity Rule requires that a conformity analysis be performed that demonstrates that a Proposed Action does not (1) cause or contribute to any new violation of any NAAQS in the area; (2) interfere with provisions in the SIP for maintenance or attainment of any NAAQS; (3) increase the frequency or severity of any existing violation of any NAAQS; or (4) delay timely attainment of any NAAQS, any interim emission reduction, goals, or other milestones included in the SIP for air quality. A conformity review must be performed when a federal action generates air pollutants in a region that has been designated a *nonattainment* or *maintenance area* for one or more NAAQS. *Nonattainment areas* are geographic regions where the air quality fails to meet the NAAQS. *Maintenance areas* are regions where NAAQS were exceeded in the past, and are subject to restrictions specified in a SIP-approved maintenance plan to preserve and maintain the newly regained attainment status. Provisions in the General Conformity Rule allow for exemptions from performing a conformity determination if the total net increase in emissions of individual nonattainment or maintenance area pollutants resulting from implementation of the Proposed Action fall below the significant (*de minimis*) threshold values established in 40 CFR 93.153 (b) (1) and (2).

As of 19 January 2011, the state of Oklahoma does not have any nonattainment areas for the NAAQS pollutants (EPA 2011). At this time the state of Oklahoma does not have a SIP in place for the Oklahoma City area. Therefore an air conformity analysis would not be required for this proposed action.

The air quality analysis presented in this section describes impacts based on current regulations. If regulations change prior to implementation of the Preferred Alternative, Alternative 2, or the No-Action Alternative, air quality impacts should be reevaluated using the new standards.

4.1.2 Impacts

4.1.2.1 Preferred Alternative

The Preferred Alternative involves commencing a long-term lease of the MROTC. Pollutant emissions associated with implementation of the Preferred Alternative at Tinker AFB would be limited to operational emissions resulting from operating the MROTC facility. No construction, renovation, or demolition activities are proposed under the Preferred Alternative. Emissions levels generated from aircraft maintenance would remain unchanged following commencement of a long-term lease. At this time, no new daily operations would be implemented as a result of the long-term lease of MROTC and the type and quantity of operating equipment (i.e. emergency

generators, compressors) is not expected to increase from what is currently used. Therefore, operational emissions are expected to remain below *de minimis* levels for air pollutants. Because the long-term lease of the MROTC would not generate any new industrial, storage or manufacturing activities, emissions are expected to remain unchanged from current levels and there is not expected to be any change in GHG emissions from current conditions. Therefore, under implementation of the Preferred Alternative, there would be no impacts to air quality and conditions would remain as described in Section 3.1, *Air Quality*.

4.1.2.2 Alternative 2: Purchase of MROTC

Similar to the Preferred Alternative, pollutant emissions associated with implementation of Alternative 2 would be limited to operational emissions. No construction, renovation, or demolition activities are proposed under Alternative 2, and no new daily operations would be implemented as a result of the purchase of the MROTC. Emissions levels generated from aircraft maintenance would remain unchanged following purchase of the property. Because the acquisition of the MROTC would not generate any new industrial, storage, or manufacturing activities, emissions (including GHG emissions) are expected to remain unchanged from current levels. Therefore, under implementation of Alternative 2, there would be no impacts on air quality and conditions would remain as described in Section 3.1, *Air Quality*.

4.1.2.3 Alternative 3: No-Action Alternative

Under the No-Action Alternative, Tinker AFB would not implement the Proposed Action and acquisition of the MROTC would not occur, causing the 76 AMXG to continue to operate at maximum capacity. Tinker AFB would continue to utilize hangar space at the MROTC under the existing short-term operations service contract. Upon expiration of the short-term operations service contract, the 76 AMXG workload would be relocated to existing facilities on Tinker AFB to the extent possible, with the remaining workload to be contracted off-base, potentially resulting in violation of *Limitations on the Performance of Depot-Level Maintenance of Material* as described in 10 USC §2466.

Relocation of the 76 AMXG workload to on-base facilities would not likely result in any change in existing air quality permits as the existing workload of the 76 AMXG is not expected to change, so the associated emissions from those operations would also not change. Therefore, the No-Action Alternative would have no effect on on-base air quality. However, relocation of portions of the 76 AMXG workload off base could create air quality conditions different from those at the MROTC and Tinker AFB and may require new air quality permits or revisions to existing permits.

An analysis of air quality conditions, emissions sources, and permitting requirements at the site of proposed off-base facilities would be required to determine potential impacts on air quality resulting from relocating the 76 AMXG workload to those facilities. Until the off-base sites are identified, a thorough evaluation of impacts and their significance to air quality cannot be completed for those sites.

4.2 Cultural Resources

4.2.1 Approach to Analysis

Cultural resources are subject to review under both federal and state laws and regulations. Section 106 of the NHPA of 1966 empowers the Advisory Council on Historic Preservation to comment on federally initiated, licensed, or permitted projects affecting cultural sites listed or eligible for inclusion on the NRHP.

Once cultural resources have been identified, significance evaluation is the process by which resources are assessed relative to significance criteria for scientific or historic research, for the general public, and for traditional cultural groups. Only cultural resources determined to be significant (i.e., eligible for the NRHP) are protected under the NHPA.

Analysis of potential impacts to cultural resources considers both direct and indirect impacts. Direct impacts may occur by (1) physically altering, damaging, or destroying all or part of a resource; (2) altering characteristics of the surrounding environment that contribute to resource significance; (3) introducing visual, audible, or atmospheric elements that are out of character with the property or alter its setting; or (4) neglecting the resource to the extent that it deteriorates or is destroyed.

Direct impacts can be assessed by identifying the types and locations of Proposed Actions and determining the exact locations of cultural resources that could be affected. Indirect impacts result primarily from the effects of project-induced population increases and the resultant need to develop new housing areas, utility services, and other support functions necessary to accommodate population growth. These activities and facilities' subsequent use can disturb or destroy cultural resources.

4.2.2 Impacts

The entire land area of Tinker AFB has been surveyed for archeological resources, and approximately 131 known archaeological sites are present in areas adjacent to the base (Tinker AFB 2005a). Three historic archaeological sites are on the property parcel associated with the Proposed Action. All three sites are recommended as ineligible for listing in the NRHP (Tinker AFB 2002a).

Although the likelihood of discovering significant cultural resources such as archeological deposits would be extremely minimal during the implementation of the Proposed Action, any such inadvertent discoveries would be processed under Tinker AFB's ICRMP, Section E.7.3, *Inadvertent Discoveries*, and provisions of applicable law(s) such as NHPA Section 106 (36 CFR 800.13).

4.2.2.1 Preferred Alternative

The Preferred Alternative would commence a long-term lease of the MROTC, and no ground-disturbing activities are associated with the alternative. The Preferred Alternative would have no

effect on any property listed or eligible for listing in the NRHP. Cultural resources, as described in Section 3.2, *Cultural Resources*, would not be impacted if the Preferred Alternative were selected. The Tinker AFB Integrated Cultural Resources Management Plan would be updated to include the MROTC property.

4.2.2.2 Alternative 2: Purchase of MROTC

Under Alternative 2, Tinker AFB would involve the purchase of the MROTC, and no ground-disturbing activities are associated with the alternative. Alternative 2 would have no effect on any property listed or eligible for listing in the NRHP. Cultural resources, as described in Section 3.2, *Cultural Resources*, would not be impacted if Alternative 2 were selected. The Tinker AFB Integrated Cultural Resources Management Plan would be updated to include the MROTC property.

4.2.2.3 Alternative 3: No-Action Alternative

Under the No-Action Alternative, Tinker AFB would not implement the Proposed Action and acquisition of the MROTC would not occur, causing the 76 AMXG to continue to operate at maximum capacity. Tinker AFB would continue to utilize hangar space at the MROTC under the existing short-term operations service contract. Upon expiration of the short-term operations service contract, the 76 AMXG workload would be relocated to existing facilities on Tinker AFB to the extent possible, with the remaining workload to be contracted off base, potentially resulting in violation of *Limitations on the Performance of Depot-Level Maintenance of Material* as described in 10 USC §2466.

Relocation of the 76 AMXG workload to existing facilities on Tinker AFB could impact cultural resources if the relocation occurred at an historic building and would significantly alter character-defining features of the building as defined in the Tinker AFB ICRMP (Tinker AFB 2005a). Two of the five identified No-Action Alternative locations (i.e., B240 and B3001) are individually eligible for NRHP listing; B3001 is also part of the Douglas Cargo Aircraft Manufacturing Historic District.

Cultural resources may occur at the location of off-base and may have the potential to be impacted from the relocation of workload. A cultural resources review of any proposed off-base facilities and associated locations would be required to determine potential impacts on cultural resources resulting from relocating the 76 AMXG workload to those facilities. Until these off-base sites are identified, a thorough evaluation of impacts and their significance on cultural resources cannot be completed.

4.3 Environmental Justice and Protection of Children

4.3.1 Approach to Analysis

The Proposed Action has been evaluated based on EO 12898 and EO 13045 to ensure that no minority communities or low-income communities and areas supporting or frequented by

concentrated populations of children are disproportionately affected by implementation of the Proposed Action or alternatives. Determination of the significance level of potential impacts on environmental justice and protection of children is based on the overall impact on current conditions within the vicinity of the MROTC facility. Actions that may disproportionately negatively impact minority or low-income populations within an area or expose children to increased health and safety risks would be considered detrimental.

4.3.2 Impacts

4.3.2.1 Preferred Alternative

Implementation of the Preferred Alternative would result in the long-term lease of the MROTC. Therefore, no land acquisition would be required and there would be no change to the current Tinker AFB boundaries. Existing security and controlled-access measures would remain in place following implementation of the Preferred Alternative, preventing unauthorized access and reducing the likelihood of children entering the facility. Because no additional operations would be included as part of the Preferred Alternative, no impacts on minority populations or low-income populations would be anticipated. No adverse environmental impacts to the surrounding area are expected to result from implementation of the Preferred Alternative. Therefore, no populations in the surrounding area—including minority populations and low-income populations—would be disproportionately or otherwise affected under implementation of the Preferred Alternative.

The nearest residential areas are approximately 0.7 mile to the east and northeast of the proposed project site. There are no child development centers, schools, or parks located within 1 mile of the proposed project site. Access to the MROTC is currently secured by fencing, and a security access card is required to access the site; these measures would remain in effect following implementation of the Preferred Alternative. The level of security and prevention of unauthorized access would reduce the likelihood of children entering the facility. In addition, no known damaging activities such as those that would impact air quality, noise, safety, or water resources would be included as part of the Preferred Alternative. Therefore, under implementation of the Preferred Alternative, there would be no impacts to concentrations of children. Conditions would remain as described in Section 3.3, *Environmental Justice and Protection of Children*.

4.3.2.2 Alternative 2: Purchase of MROTC

Alternative 2 includes Tinker AFB purchasing the MROTC property. This land acquisition would occur at an area directly across the street to the existing Tinker AFB boundary and would not change current operations at the proposed project site. Existing security and controlled-access measures would remain in place following implementation of Alternative 2, preventing unauthorized access and reducing the likelihood of children entering the facility. Similar to the Preferred Alternative, no adverse environmental impacts to the surrounding area are expected to result from implementation of Alternative 2; therefore, no populations in the surrounding area—

including minority and low-income populations and concentrations of children—would be disproportionately or otherwise affected under implementation of Alternative 2. Conditions would remain as described in Section 3.3, *Environmental Justice and Protection of Children*.

4.3.2.3 Alternative 3: No-Action Alternative

Under the No-Action Alternative, Tinker AFB would not implement the Proposed Action, and acquisition of the MROTC would not occur, causing the 76 AMXG to continue to operate at maximum capacity. Tinker AFB would continue to utilize hangar space at the MROTC under the existing short-term operations service contract; upon expiration of the short-term operations service contract, the 76 AMXG workload would be relocated to existing facilities on Tinker AFB to the extent possible, with the remaining workload to be contracted off base, potentially resulting in violation of *Limitations on the Performance of Depot-Level Maintenance of Material* as described in 10 USC §2466.

Minority populations, low-income populations, or concentrations of children, as described in Section 3.3, *Environmental Justice and Protection of Children*, would not be impacted by relocation of all workload to the No-Action Alternative sites identified on Tinker AFB. The No-Action Alternative sites on Tinker AFB occur in areas that are located away from minority populations or low-income populations, schools, daycare centers, and other areas where children may congregate.

Under the No-Action Alternative, however, some of the 76 AMXG workload may be contracted off base; minority or low-income populations or areas where children may congregate may occur near these selected off-base sites. An assessment of minority populations and low-income populations and concentrations of children would be required to determine potential impacts on these populations resulting from relocating the 76 AMXG workload off base. Until these off-base sites are identified, a thorough evaluation of impacts and their significance to environmental justice and protection of children cannot be completed for them.

4.4 Hazardous Materials and Wastes

4.4.1 Approach to Analysis

Numerous local, state, and federal laws regulate the storage, handling, disposal, and transportation of hazardous materials and wastes; the primary purpose of these laws is to protect public health and the environment. The significance of potential impacts associated with hazardous substances is based on their toxicity, ignitability, and corrosivity. Impacts associated with hazardous materials and wastes would be significant if the storage, use, transportation, or disposal of hazardous substances substantially increases the human health risk or environmental exposure.

4.4.2 Impacts

4.4.2.1 Preferred Alternative

The Preferred Alternative includes the long-term lease of the MROTC property; no change in aircraft modification operations would occur under the Preferred Alternative. There would be no change in the use, generation, storage, or disposal of hazardous materials and wastes at the MROTC; currently, all such materials and wastes are utilized and monitored in accordance with Tinker AFB hazardous materials and waste management protocols (e.g., OC-ALC Plan 19-2 [Tinker AFB 2004], ECAMP [Tinker AFB 2009]). Therefore, implementation of the Preferred Alternative would result in no impacts on or resulting from hazardous materials and waste storage at Tinker AFB or the MROTC; conditions would remain as described in Section 3.4, *Hazardous Materials and Wastes*.

The MROTC is adjacent to known groundwater contamination; however, long-term lease of the MROTC property would not involve any activities that would interfere with groundwater resources. Therefore, implementation of the Preferred Alternative would result in no impacts on or resulting from groundwater contamination.

4.4.2.2 Alternative 2: Purchase of MROTC

Alternative 2 includes the purchase of MROTC by Tinker AFB and there would be no change in the use, generation, storage, or disposal of hazardous materials and wastes at the MROTC from current practices. Therefore, implementation of Alternative 2 would result in no impacts to or resulting from hazardous materials and waste storage at Tinker AFB or the MROTC; conditions would remain as described in Section 3.4, *Hazardous Materials and Wastes*.

Similar to the Preferred Alternative, acquisition of the MROTC would not involve any activities that would interfere with groundwater resources; therefore, implementation of Alternative 2 would result in no impacts to or resulting from groundwater contamination.

4.4.2.3 Alternative 3: No-Action Alternative

If the No-Action Alternative were selected, Tinker AFB would not implement the Proposed Action and acquisition of the MROTC would not occur, causing the 76 AMXG to continue to operate at maximum capacity. Tinker AFB would continue to utilize hangar space at the MROTC under the existing short-term operations service contract; upon expiration of the short-term operations service contract, the 76 AMXG workload would be relocated to existing facilities on Tinker AFB to the extent possible, with the remaining workload to be contracted off-base, potentially resulting in violation of *Limitations on the Performance of Depot-Level Maintenance of Material* as described in 10 USC §2466.

The 76 AMXG operations would not change and the hazardous materials and wastes utilized and generated for operations would not change under the No-Action Alternative; however, relocation of those operations could result in changes in the configuration of the hazardous materials and

wastes storage sites and could introduce these materials to areas that were not previously recipients or generators of such materials. Relocation of all workload to the No-Action Alternative sites on Tinker AFB may require reconfiguration or relocation of hazardous materials and wastes storage and accumulation sites. These materials and storage and accumulation sites would be regulated by the Tinker AFB HMMP and would not result in negative impacts on or from hazardous wastes and materials.

An evaluation of the hazardous materials and wastes stream at the sites proposed for off-base workload accommodation would be required to determine the potential impacts on or resulting from the use of materials at the sites of the relocated 76 AMXG workload. Until the off-base sites are identified, a thorough evaluation of impacts and their significance to or resulting from hazardous materials and wastes cannot be completed for them.

4.5 Land Use

4.5.1 Approach to Analysis

Significance of potential land use impacts is based on the level of land use sensitivity in areas affected by a Proposed Action. In general, land use impacts are considered significant if they would (1) be inconsistent or in noncompliance with applicable land use plans or policies, (2) preclude the viability of existing land use, (3) preclude continued use or occupation of an area, (4) be incompatible with adjacent or vicinity land use to the extent that public health or safety is threatened, or (5) conflict with airfield planning criteria established to ensure the safety and protection of human life and property.

4.5.2 Impacts

Activities conducted at the MROTC are included in the Tinker AFB's *General Plan* (Tinker AFB 2005b), and the Proposed Action would be compatible with existing base land use, airfield safety guidelines, and off-base land use development guidelines addressing safety, functionality, and environmental protection zones.

4.5.2.1 Preferred Alternative

Implementation of the Preferred Alternative would enable Tinker AFB to secure the infrastructure necessary to accommodate the current and programmed increased in workload for the 76 AMXG aircraft modifications through the commencement of a long-term lease of the MROTC property. Operations at the proposed project site would not change from current uses, and there would be no change in land use and/or zoning at the MROTC. Off-base land surrounding the MROTC are planned to include industrial, residential, undeveloped/agricultural, and open space land use per the *OKC Plan* and *Southeast Sector Plan* (City of Oklahoma City 2007); therefore, MROTC operations are consistent with existing and planned development in the vicinity. Tinker AFB land adjacent to the project area is planned as industrial, airfield, and aircraft operations and maintenance land use per the *General Plan's* future land use. Therefore,

implementation of the Preferred Alternative would present no impacts on land use; conditions would remain as described in Section 3.5, *Land Use*.

4.5.2.2 Alternative 2: Purchase of MROTC

Implementation of Alternative 2 would enable Tinker AFB to accommodate the current and programmed increased in workload for the 76 AMXG aircraft modifications by purchasing the MROTC property. Implementation of Alternative 2 would also secure infrastructure necessary for the 76 AMXG aircraft modifications, but would secure permanently this infrastructure necessary through the purchase of the MROTC, rather than the long-term lease of the property as in the Preferred Alternative. The proposed project site land use conditions are the same as those described for the Preferred Alternative, and neither operations nor land use at the proposed project site would change from the current scenario. Therefore, implementation of Alternative 2 would present no impacts to land use; conditions would remain as described in Section 3.5, *Land Use*.

4.5.2.3 Alternative 3: No-Action Alternative

If the No-Action Alternative were selected, Tinker AFB would not implement the Proposed Action, and acquisition of the MROTC would not occur, causing the 76 AMXG to continue to operate at maximum capacity. Tinker AFB would continue to utilize hangar space at the MROTC under the existing short-term operations service contract; upon expiration of the short-term operations service contract, the 76 AMXG workload would be relocated to existing facilities on Tinker AFB to the extent possible, with the remaining workload to be contracted off base, potentially resulting in violation of *Limitations on the Performance of Depot-Level Maintenance of Material* as described in 10 USC §2466.

Relocation of all workload to the No-Action Alternative sites on Tinker AFB would not change any existing land use on the base. These sites are located within airfield or aircraft operations and maintenance land uses on Tinker AFB. Adjacent on-base land uses north of B3001 also include administration. The nearest off-base areas include the MROTC site, which is considered a compatible land use with Tinker AFB.

An analysis of existing and future land use at the sites of proposed off-base facilities would be required to determine potential impacts on land use resulting from relocating the 76 AMXG workload to those locations. Off-base facilities would likely be in an industrial area; however, until the off-base sites are identified, a thorough evaluation of impacts and their significance to or resulting from adjacent land use cannot be completed for those sites.

4.6 Safety

4.6.1 Approach to Analysis

If implementation of the Proposed Action would substantially increase the risks associated with aircraft mishap potential or flight safety relevant to the public or the environment, it would

represent a significant impact. For example, if an action involved an increase in aircraft operations such that mishap potential would increase significantly, air safety would be compromised; conversely, beneficial impacts would be those reducing aircraft mishap potential.

Further, if implementation of the Proposed Action would result in incompatible land use with regard to safety criteria such as CZs or APZs, impacts would be significant. Beneficial impacts would include those reducing exposure to mishaps.

4.6.2 Impacts

4.6.2.1 Preferred Alternative

The Preferred Alternative involves the long-term lease at the MROTC to secure infrastructure required for the 76 AMXG aircraft modifications. All activities identified in the Preferred Alternative are consistent with guidelines established in the Tinker AFB *General Plan* (Tinker AFB 2005b). The 76 AMXG aircraft modifications at the MROTC would not change following implementation of the Preferred Alternative. Components such as security, site access, and fire and emergency services would continue to be provided for the site through the terms of the lease.

Emergency Response. Currently, the Oklahoma City Fire Department Station No. 13 is the first responder (with Tinker AFB serving as secondary responder and backup) during emergencies at the MROTC. There would be no change in emergency response services from current conditions.

Fire Suppression. Existing fire detection and suppression systems at the MROTC have been tested and no major inadequacies or concerns have been identified (Rick Ramsey, personal communication, 6 August 2010). The buildings at MROTC were constructed in 2007 or later, so fire detection and suppression systems are relatively new and do not present a safety concern at the MROTC.

Traffic Safety. Traffic safety concerns would arise during transport of aircraft across Douglas Boulevard between Tinker AFB and the MROTC, when the road is closed by Oklahoma City Police. Operations would not change at the MROTC, including the number of road closures, under implementation of the Preferred Alternative; therefore, there would be no change in traffic safety conditions and no amelioration of traffic safety concerns.

Aircraft Maintenance Operations and Site Access. Aircraft maintenance operations at the facility are not expected to change from current activities; therefore, impacts to public health and safety from such operations would remain unchanged. Further, the Air Force would continue to implement procedures to protect the safety of the public and children, primarily by restricting access to the facility upon acquisition. Currently, access to the MROTC is restricted, and the existing access-restriction infrastructure meets Tinker AFB's security requirements. Control of site access would continue to be provided for under the long-term lease agreement.

In summary, implementation of the Preferred Alternative would result in no changes in operations at the MROTC; therefore, no change in existing safety conditions at the MROTC or

relating to operations at the MROTC would occur, resulting in no impacts on safety. Conditions would remain as described in Section 3.6, *Safety*.

4.6.2.2 Alternative 2: Purchase of MROTC

Alternative 2 involves the purchase of the MROTC to secure infrastructure required for the 76 AMXG aircraft modifications. All activities identified in the Preferred Alternative are consistent with guidelines established in the Tinker AFB *General Plan* (Tinker AFB 2005b). The 76 AMXG aircraft modifications at the MROTC would not change following implementation of Alternative 2. However, responsibility for security, site access, and fire and emergency services would fall to Tinker AFB under implementation of Alternative 2.

Emergency Response. Currently, the Oklahoma City Fire Department Station No. 13 is the first responder (with Tinker AFB serving as secondary responder and backup) during emergencies at the MROTC. Due to gate security requirements, new gate configurations on Tinker AFB impede larger emergency and fire response vehicles from passing through the gates. Because the MROTC property is not contiguous with the base (i.e., it is separated from the base by Douglas Boulevard), following purchase of the MROTC, the Tinker AFB Fire Department would be responsible for fire and emergency response and a new Tinker AFB Fire Department station would be constructed on site. One existing Tinker AFB Fire Department station is located in B117 on the north side of the base; Hruskocy and Turnbull gates are closest to B117 and would most likely be used by smaller response vehicles to reach the MROTC. Emergency response time may be increased from current response times due to impedances created by the security gate configurations on larger crash trucks. Tinker AFB Fire Department would always respond to an emergency situation using whatever the most expeditious route available given the conditions at the time of the event.

Fire Suppression. Similar to conditions under implementation of the Preferred Alternative, the existing fire detection and suppression systems are relatively new and do not present a safety concern at the MROTC.

Traffic Safety. Similar to conditions under implementation of the Preferred Alternative, traffic concerns from aircraft transport across Douglas Boulevard would remain unchanged because there would be no change in operations at the MROTC and therefore no change in the number of aircraft transported between the MROTC and Tinker AFB.

Aircraft Maintenance Operations and Site Access. Aircraft maintenance operations at the facility are not expected to change from current activities; therefore, impacts to public health and safety from such operations would remain unchanged. Further, the Air Force would continue to implement procedures to protect the safety of the public and children, primarily by restricting access to the facility upon acquisition. Currently, access to the MROTC is restricted, and the existing access-restriction infrastructure meets Tinker AFB's security requirements. Upon acquisition of the property, the Air Force would be responsible for controlling access to the MROTC. The Air Force is capable of staffing properly trained security personnel for the MROTC property. Upon purchase of the MROTC, Tinker AFB would likely put in a crash gate

and include a heavy arresting cable within/along the fence to prevent vehicle access through the fence.

In summary, implementation of Alternative 2 would adversely impact fire and emergency response time because security gate configurations impede travel of response vehicles. There would be no impacts on safety concerns resulting from fire detection or suppression systems, traffic safety, or site access.

4.6.2.3 Alternative 3: No-Action Alternative

If the No-Action Alternative were selected, Tinker AFB would not implement the Proposed Action, and acquisition of the MROTC would not occur, causing the 76 AMXG to continue to operate at maximum capacity. Tinker AFB would continue to utilize hangar space at the MROTC under the existing short-term operations service contract; upon expiration of the short-term operations service contract, the 76 AMXG workload would be relocated to existing facilities on Tinker AFB to the extent possible, with the remaining workload to be contracted off base, potentially resulting in violation of *Limitations on the Performance of Depot-Level Maintenance of Material* as described in 10 USC §2466.

The No-Action Alternative sites on Tinker AFB are located along the airfield surface area as zoned by the *General Plan*, and are not in conflict with CZs, APZs, or runways. Human health and safety conditions (e.g., fire detection / suppression systems, emergency response times, traffic safety, site access) at potential sites of proposed off-base facilities would not change from the existing health and safety conditions at Tinker AFB; therefore, the No-Action Alternative sites would not result in impacts on human health and safety.

An analysis of human health and safety conditions (e.g., fire detection / suppression systems, emergency response times, traffic safety, site access) at potential sites of proposed off-base facilities would be required to determine potential impacts from relocation of the 76 AMXG workload on those sites. Until the off-base sites are identified, a thorough evaluation of impacts and their significance to human health and safety cannot be completed for those sites.

4.7 Socioeconomics

4.7.1 Approach to Analysis

Determination of the significance of impacts to socioeconomic conditions is based on the overall impacts to population, economic activity, and other socioeconomic attributes in the vicinity of the project site and the surrounding region (for this project, the population at Tinker AFB was identified as the surrounding region). For example, potentially beneficial impacts on socioeconomic conditions could result from an action that increases short-term or long-range employment; adverse impacts would result from an action that displaces a large number of people or reduces work productivity with regard to the 76 AMXG mission. The following sections discuss potential socioeconomic consequences of the evaluated alternatives.

4.7.2 Impacts

4.7.2.1 Preferred Alternative

Under the Preferred Alternative, Tinker AFB would commence a long-term lease of the MROTC facility to secure the infrastructure necessary for the 76 AMXG aircraft modifications operations. The Preferred Alternative would not change the number of job positions at the MROTC or at Tinker AFB. Operations at the MROTC would not change from current operations and would remain compatible with existing and planned land use of the surrounding area. The Preferred Alternative would not impact populations of the surrounding communities or result in a change in the local work force, and activities would remain similar to current activities in area. Therefore, implementation of the Preferred Alternative would result in no changes to the socioeconomic conditions of the proposed project area; conditions would remain as described in Section 3.7, *Socioeconomics*.

4.7.2.2 Alternative 2: Purchase of MROTC

Similar to the Preferred Alternative, implementation of Alternative 2 would not result in a change in operations at the MROTC and would not impact populations of the surrounding communities. Therefore, implementation of Alternative 2 would result in no changes to the socioeconomic conditions of the proposed project area; conditions would remain as described in Section 3.7, *Socioeconomics*.

4.7.2.3 Alternative 3: No-Action Alternative

If the No-Action Alternative were selected, Tinker AFB would not implement the Proposed Action, and acquisition of the MROTC would not occur, causing the 76 AMXG to continue to operate at maximum capacity. Tinker AFB would continue to utilize hangar space at the MROTC under the existing short-term operations service contract; upon expiration of the short-term operations service contract, the 76 AMXG workload would be relocated to existing facilities on Tinker AFB to the extent possible, with the remaining workload to be contracted off base, potentially resulting in violation of *Limitations on the Performance of Depot-Level Maintenance of Material* as described in 10 USC §2466.

Relocation of the 76 AMXG workload to the No-Action Alternative sites on Tinker AFB could result in impacts on local socioeconomic conditions if operations were shut down during relocation. Shutdown of operations may result in lost hours for hourly workers or furlough time for salary workers. At this time, the exact process of relocating workload has not been determined; however, at least a temporary shutdown of operations would likely occur, resulting in temporary adverse impacts on socioeconomics. Under the No-Action Alternative, there are no available on-base facilities that can accommodate IBS testing/work; therefore, on-base workload could decrease because IBS workload programmed for Tinker AFB would need to be conducted at off-base facilities.

Relocating a portion of the 76 AMXG workload to off-base sites would introduce new jobs to the area, providing a beneficial impact. The relocation of the workload would transfer some jobs away from Tinker AFB; depending on the location of the off-base site, current employees could lose their jobs to potential employees nearer the new site. Therefore, relocation of the 76 AMXG workload to off-base sites could result in negative impacts on socioeconomic conditions at Tinker AFB and provide beneficial impacts on socioeconomic conditions near the off-base sites. An analysis of socioeconomic conditions at the site of proposed off-base facilities would be required to determine potential impacts from relocation of the 76 AMXG workload on those sites. Until the off-base sites are identified, a thorough evaluation of impacts and their significance on human health and safety cannot be completed for them.

4.8 Transportation and Circulation

4.8.1 Approach to Analysis

Potential impacts on transportation and circulation are assessed with respect to anticipated disruption or improvement of current transportation patterns and systems; deterioration or improvement of existing levels of service; and changes in existing levels of transportation safety. Beneficial or adverse impacts may arise from the physical changes in circulation (e.g., closing, rerouting, or creating roads), construction activity, introduction of construction-related traffic on local roads, or changes in daily or peak-hour traffic volumes created by installation workforce or population changes. Adverse impacts on roadway capacities would be significant if roads with no history of exceeding capacity were forced to operate at or above their full design capacity.

4.8.2 Impacts

4.8.2.1 Preferred Alternative

Implementation of the Preferred Alternative would result in the long-term lease of the MROTC by Tinker AFB to secure infrastructure necessary for the 76 AMXG aircraft modifications operations. The Preferred Alternative would not result in any change in operations or number of personnel at the MROTC or at Tinker AFB; therefore, no change in commuter traffic volume would occur as a result of implementation of the Preferred Alternative and no changes to transportation and circulation at the MROTC or Tinker AFB would be expected; conditions would remain as described in Section 3.8, *Transportation and Circulation*.

4.8.2.2 Alternative 2: Purchase of MROTC

Similar to the Preferred Alternative, Alternative 2 would enable Tinker AFB to secure the infrastructure necessary for the 76 AMXG aircraft modifications, which would be achieved through the purchase of the MROTC. Actions included in Alternative 2 would not result in any change in operations or number of personnel at the MROTC or at Tinker AFB; therefore, no change in traffic volume would occur from implementation of Alternative 2 and there would be no changes in transportation and circulation at the MROTC or Tinker AFB. Upon purchase of

the MROTC, entry control and circulation control would be the responsibility of Tinker AFB. Additional security infrastructure such as a new crash gate and installing heavy arresting cable within or along the existing perimeter fence would likely be installed following purchase of the property to provide additional vehicle access control. The Air Force is capable of staffing properly trained security personnel for the MROTC property; implementation of Alternative 2 would not result in significant impacts to security personnel training or staffing programs. Conditions would remain as described in Section 3.8, *Transportation and Circulation*.

4.8.2.3 Alternative 3: No-Action Alternative

If the No-Action Alternative were selected, Tinker AFB would not implement the Proposed Action, and acquisition of the MROTC would not occur, causing the 76 AMXG to continue to operate at maximum capacity. Tinker AFB would continue to utilize hangar space at the MROTC under the existing short-term operations service contract; upon expiration of the short-term operations service contract, the 76 AMXG workload would be relocated to existing facilities on Tinker AFB to the extent possible, with the remaining workload to be contracted off base, potentially resulting in violation of *Limitations on the Performance of Depot-Level Maintenance of Material* as described in 10 USC §2466.

Relocation of the 76 AMXG workload to the No-Action Alternative sites on Tinker AFB could improve existing traffic concerns by eliminating the need to tow aircraft across Douglas Boulevard; the No-Action Alternative sites are located in the aircraft operations and maintenance areas of Tinker AFB, adjacent to the airfield. Relocation of workload would require parking availability for relocated personnel to the No-Action Alternative sites.

Relocation of workload to off-base sites could result in changes in traffic volume and flow in the vicinity of the site. The increased personnel and resultant changes in traffic flow and volume resulting from relocating the 76 AMXG workload to new facilities, as well as the existing traffic and parking capacity of the site, would need to be evaluated to determine potential impacts on transportation and circulation at the proposed off-base facilities. Until these off-base sites are identified, a thorough evaluation of impacts and their significance to transportation and circulation cannot be completed for them.

4.9 Utilities and Infrastructure

4.9.1 Approach to Analysis

A project would adversely impact local or regional infrastructure if its implementation increased utility demand beyond the carrying capacity of existing systems. Infrastructure would be significantly impacted if the project were to result in an increase in demand on public utilities that exceeded available supply and required the construction of additional or substantial to expansion to existing utility systems.

4.9.2 Impacts

4.9.2.1 Preferred Alternative

The Preferred Alternative includes the long-term lease of the MROTC by Tinker AFB; no ground-disturbing activities are proposed under this action. Under the conditions of the long-term lease, all utilities and solid waste collection and disposal would be included in the lease and Tinker AFB would not be responsible for procuring the utilities and services. There would be no change to utilities and infrastructure at the MROTC and conditions would remain as described in Section 3.9, *Utilities and Infrastructure*.

4.9.2.2 Alternative 2: Purchase of MROTC

Implementation of Alternative 2 involves the acquisition of the MROTC; no ground-disturbing activities are proposed under this action. However, all utilities would become the responsibility of Tinker AFB; currently, utilities are included as part of the short-term operations service contract.

Communication. The existing wireless system that provides access to Tinker AFB systems via Boeing infrastructure would no longer be suitable for use at the MROTC under Alternative 2. Implementation of Alternative 2 would result in increased security requirements and access restrictions; the wireless system would not meet these requirements and a stand-alone hard line government internet and phone system would need to be installed at the MROTC.

Electricity. Electricity is currently provided by OG&E to the proposed project site; Tinker AFB would continue to utilize OG&E as the electrical power provider at the site; OG&E also supplies electrical power to Tinker AFB. No additional AT/FP measures would need to be implemented upon acquisition of the MROTC.

Potable Water. Drinking water for the proposed project site is provided by the Oklahoma City municipal water supply and would continue to be provided to the site in this manner. Responsibility for maintaining the existing utility agreement would fall to Tinker AFB following purchase of the MROTC. No additional AT/FP measures would need to be implemented upon acquisition of the MROTC.

Wastewater. The existing wastewater treatment system at the MROTC would remain in place; Tinker AFB would be responsible for maintaining the system. Alternative 2 does not include any change in personnel; therefore, there would be no change in the wastewater load on the existing system, resulting in no impact to the system. No additional permitting of the wastewater system at MROTC is required following transfer of ownership to Tinker AFB (personal communication, Bruce Vande Lune, 17 March 2011).

Stormwater. The proposed project site is currently exempt from stormwater runoff permitting (Boeing, No Exposure Certification #WQNEC0584). Upon transfer of ownership to Tinker AFB, Tinker AFB would be required to apply for a No Exposure Certificate to retain current exemption status for the proposed project site.

Solid Waste. Under the existing lease, collection and disposal of nonhazardous solid wastes is contracted to Waste Management, Inc. Upon transfer of ownership to Tinker AFB, Tinker AFB would become responsible for arranging solid waste collection and disposal services.

Implementation of Alternative 2 would not increase utility demand beyond the carrying capacity or exceed available supply; therefore, Alternative 2 would not adversely impact local or regional infrastructure.

4.9.2.3 Alternative 3: No-Action Alternative

If the No-Action Alternative were selected, Tinker AFB would not implement the Proposed Action, and acquisition of the MROTC would not occur, causing the 76 AMXG to continue to operate at maximum capacity. Tinker AFB would continue to utilize hangar space at the MROTC under the existing short-term operations service contract; upon expiration of the short-term operations service contract, the 76 AMXG workload would be relocated to existing facilities on Tinker AFB to the extent possible, with the remaining workload to be contracted off base, potentially resulting in violation of *Limitations on the Performance of Depot-Level Maintenance of Material* as described in 10 USC §2466.

Although the 76 AMXG workload would not change and utility requirements of those operations would remain the same, relocation of those operations would reallocate the on-base utility demands to the proposed No-Action Alternative sites. The No-Action Alternative sites were selected as facilities that would be capable of accommodating the utility demands of the 76 AMXG operations without extensive upgrades. Therefore, relocation of the 76 AMXG workload to the No-Action Alternative sites would result in no impact on existing utilities and infrastructure.

Relocation of workload to off-base sites could result in changes in utility volume or infrastructure needs for the site. One example of such a change would be a greater electrical demand than currently exists at a site. An analysis of existing utilities and infrastructure for the site would be required to determine potential impacts on these systems resulting from relocating the 76 AMXG workload to those sites. Until these off-base sites are identified, a thorough evaluation of impacts and their significance to utilities and infrastructure cannot be completed for them.

4.10 Water Resources

4.10.1 Approach to Analysis

Significance criteria for water resources impacts are based on water availability, quality, and use; existence of floodplains; and associated regulations. An impact on water resources would be significant if it would (1) reduce water availability to or interfere with the supply of existing users, (2) create or contribute to overdraft of groundwater basins or exceed safe annual yield of water supply sources, (3) adversely affect water quality or endanger public health by creating or worsening adverse health hazard conditions, (4) threaten or damage unique hydrologic

characteristics, or (5) violate established laws or regulations that have been adopted to protect or manage water resources of an area including wetlands. Impacts of flood hazards on Preferred Alternatives are significant if such actions are proposed in areas with high probabilities of flooding.

4.10.2 Impacts

4.10.2.1 Preferred Alternative

The Preferred Alternative involves entering into a long-term lease of the MROTC; no ground-disturbing activities are proposed under this action. Operations at the MROTC would not change under implementation of the Preferred Alternative. The 100-year floodplain for Soldier Creek is on the northwestern portion of the MROTC property; however, no buildings or operations at the MROTC are on this portion of the site, and this would not change under implementation of the Preferred Alternative. Therefore, there would be no changes in water resources and conditions would remain as described in Section 3.10, *Water Resources*.

4.10.2.2 Alternative 2: Purchase of MROTC

Implementation of Alternative 2 involves the acquisition of the MROTC and, similar to the Preferred Alternative, does not include any ground-disturbing activities. Alternative 2 also includes the DEQ-permitted septic system and wastewater lagoon on the MROTC property. The 100-year floodplain for Soldier Creek is on the northwestern portion of the MROTC property; however, no buildings or operations at the MROTC are on this portion of the site, and this would not change under implementation of Alternative 2. Therefore, there would be no changes in water resources and conditions would remain as described in Section 3.10, *Water Resources*.

4.10.2.3 Alternative 3: No-Action Alternative

If the No-Action Alternative were selected, Tinker AFB would not implement the Proposed Action, and acquisition of the MROTC would not occur, causing the 76 AMXG to continue to operate at maximum capacity. Tinker AFB would continue to utilize hangar space at the MROTC under the existing short-term operations service contract; upon expiration of the short-term operations service contract, the 76 AMXG workload would be relocated to existing facilities on Tinker AFB to the extent possible, with the remaining workload to be contracted off-base, potentially resulting in violation of *Limitations on the Performance of Depot-Level Maintenance of Material* as described in 10 USC §2466.

Relocation of the 76 AMXG workload to the identified No-Action Alternative sites on Tinker AFB would result in no impacts to water resources and conditions. All No-Action Alternative sites are existing buildings on base that do not occur within any floodplains or wetlands, do not occur adjacent to any surface water, and would not involve any groundwater resources or ground-disturbing activities.

Relocation of the 76 AMXG workload to off-base sites could result in impacts on water resources if any ground-disturbing activities were required and water resources were to occur in the vicinity of the off-base sites. An analysis of water resources at the off-base sites would be required to determine potential impacts on water resources resulting from relocating the 76 AMXG workload to those sites. Until the off-base sites are identified, a thorough evaluation of impacts and their significance to water quality cannot be completed for them.

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**SECTION 5.0
CUMULATIVE IMPACTS**

Cumulative impacts on environmental resources result from incremental impacts of the Preferred Alternative when combined with other past, present, and reasonably foreseeable future projects in an affected area. Cumulative impacts can result from minor but collectively substantial actions undertaken over a period of time by various agencies (federal, state or local) or persons. In accordance with NEPA, the cumulative impacts resulting from projects that are proposed, under construction, recently completed, or anticipated to be implemented in the near future are discussed below.

Projects occurring in other areas of Tinker AFB and in the vicinity of Tinker AFB are included in Table 5-1.

Table 5-1. Projects Occurring at or near Tinker AFB

Demolition of B3108	B3108 is scheduled for demolition in plans currently under development. The demolition will take place over the course of a 5- to 10-year period.
DMRT Three-Bay Hangar	Construction of a three-bay, multi-aircraft fuel-capable hangar sized for KC-135, E-3, B-1, B-52 and KC-X (next generation) tanker aircraft. The facility is proposed for construction west of B2280 (which is located on the industrial east side of the base). The new facility is required as part of the programmed depot maintenance for KC-135. Workload and repairs for this aircraft take place in three separate facilities that are inadequate in size. The new hangar is required to adequately address these issues and also to consolidate workload and function, improving efficiency.
Construct Air Traffic Control Tower	Construct a new 11-story air traffic control tower. Construction would include reinforced concrete piers, a control tower cab with tinted double glazing, an elevator, a flight command and administrative area, and a supervision and simulation training area as well as fire protection, utilities, backup power, lighting protection, access road, and any other necessary support for a complete and useable facility. Project to include minimum DoD AT/FP requirements and demolition of existing control tower and access road.
Construct Medical Clinic	Construction of a new medical clinic, approximately 172,000 sf, in the open land northeast of Gott Gate. The new facility will replace the existing clinic and would result in the demolition of the central plant, which contains both the chillers and boilers that service the clinic. Demolition of the boiler would also result in decommissioning an underground diesel storage tank. This proposed project will also include a medical squadron building as well as the war readiness materials warehouse. The new clinic will house doctors' offices, exam and treatment rooms, laboratories, radiology, pharmacy, dental clinic, conference and training rooms, as well as storage areas. Energy to operate the new boilers will include a combination of diesel fuel, stored in above ground storage tanks, and natural gas. The existing medical clinic (approximately 184,000 sf) and TRICARE facility (B5803) will be demolished upon completion of the new facilities.

Table 5-1. Projects Occurring at or near Tinker AFB (cont.)

<p>507th Base Realignment and Closure (BRAC) Action</p>	<p>As recommended by BRAC, the following actions will take place:</p> <ul style="list-style-type: none"> • The relocation of operations and maintenance personnel associated with the 137 Air Wing (AW) of the Air National Guard from Will Rogers Air Guard Station to Tinker AFB, where the 137 AW will become an associative wing, operating with the 507 Air Refueling Wing of the Air Force Reserve Command. Although the 137 AW currently operates eight C-130 cargo aircraft, those aircraft will not follow the 137 AW to Tinker AFB but rather will be relocated to Pope AFB in Fayetteville, North Carolina. • The transfer of four KC-135R aircraft from the 939 Air Reserve Wing from Portland International Airport Air Guard Station to Tinker AFB. • The demolition and construction of facilities to support the additional personnel and aircraft. <p>To implement the BRAC action, Tinker AFB has proposed the following:</p> <ul style="list-style-type: none"> • Construction of Air Force Reserve Command and Air National Guard squadron operations, operations support squadron, life support storage, and life support work area • Construction of a new hangar with hangar access and associated demolition of B1037 and B1041, which would also correct a current deficiency at Tinker AFB • Renovation of B1048
<p>Construct Physical Fitness Center</p>	<p>Construction of a 90,900 sf facility in the vicinity of Vance Gate along the western side of the base. The facility would consist of a physical fitness center, which would include a health and wellness center to include cardiovascular room, equipment and free weight room, exercise rooms, racquetball rooms, indoor track, Olympic size pool, children’s play area, two full-court basketball courts, locker rooms, and men’s and women’s restrooms. This project will also include demolition of B5922, B5937, B5927, B5916, B5915, B5924, B5920, B6004, and B216.</p>
<p>Child Development Center</p>	<p>Construction of a new child development center in the southwestern portion of the Base, north of SE 59th Street and northwest of Gott Gate in the South Forty Area. The size of the facility would be approximately 32,877 sf. The Preferred Alternative would be located approximately 375 feet west of Air Depot Road and approximately 100 feet north of the base fence line. Approximately 130 feet of the Urban Greenway Multiuse Trail would be removed and rerouted as a result. The new child development center will provide for the care and training of dependent children of both military and civilian personnel assigned to the base. The building will contain areas for child activities, staff support, facility support, core administration, and maintenance. A total of 2.1 acres of land will be required surrounding the facility.</p>
<p>Consolidated Security Forces, South Forty Development</p>	<p>Construction of a 64,000-sf facility on the southern side of the base. This project is to construct a new facility to relocate and consolidate key Security Police operations at a single facility. One centralized facility will reduce the response time to react to various situations.</p>

Table 5-1. Projects Occurring at or near Tinker AFB (cont.)

Military Family Housing Privatization	Air Force implementation of the privatization initiative which involves leasing of all housing areas to a private developer for 50 years. The Air Force also will convey all 694 existing military units to the developer and depending on the alternative selected the developer would implement a combination of demolition, renovation, and /or construction of housing units to meet the end-state requirement of 660 housing units. Once privatization is implemented, the developer will own, operate, and manager all housing units on the installation while leasing the land underlying the housing communities (approximately 224 acres) for a period of 50 years. Depending on the developer, there will be a combination of demolition, renovation, and new construction distributed throughout the military family housing areas. Included will be alternatives to desired community features such as a sound protection buffer along Sooner Rd., lighted tennis and basketball courts, and an outdoor fitness area.
Realignment of Air Depot Boulevard and Tinker Gate	Relocation is proposed for Air Depot Road/Tinker Gate located on the western side of the base. Relocation is required to provide an adequate and secure base entry. Relocation will alleviate current hazardous traffic congestion and will maintain the base perimeter security. The existing roadway alignment poses a safety issue and does not meet security requirements.
Construct T9 Test Cell at Tinker Aerospace Complex (TAC)	Construction of a new T9 noise suppression system (test cell) is required to be constructed at the TAC. This project would include a T-9 style engine testing facility, jet engine fuel storage and delivery system, utilities, building, and access driveways and parking. These facilities would allow continuous support of military jet engine repair performed at TAC, as well as provide the 76 MXW and 76 Propulsion Maintenance Group capabilities to meet mission requirements of delivering engines on time and on cost. The T9 Test Cell would also provide temporary backup facilities in case of failure of other engine testing facilities on Tinker AFB.
Large Engine Test Cell	The USAF proposes construction of a large engine test cell to accommodate anticipated increased engine-testing operations as well as to accommodate large engines. Construction of a new large engine test cell is proposed in the vicinity of B9001 in the TAC.
Renovate B3001	Renovations are proposed for the chemical cleaning line in B3001 to replace the existing aging cleaning line with an improved, energy-efficient, cleaning line system capable of accommodating larger engine parts in addition to current workload. Proposed renovations would also result in a cleaning line that is safer to operate, produces less chemical waste and generates less water to be treated by the industrial wastewater treatment plant on base. The proposed improvements are anticipated to yield an annual savings of \$2.76 million in utility costs.
Construct St. Anthony Medical Center	St. Anthony Hospital group is proposing to build a new remote emergency medical center and medical office building near Tinker AFB south of the intersection of I-40 and South Douglas Boulevard. The proposed facilities would include a 60,000-sf three-story medical center situated on seven acres of land. The medical center would offer only emergency medical services.

The projects listed above are planned to occur at roughly the same time that implementation of the Preferred Alternative would occur. Consequently, the potential exists for cumulative environmental impacts to occur with regard to air quality and safety. Cumulative air quality impacts are expected to be negligible since all projects would be required to implement BMPs to reduce air emissions below significance thresholds.

With regard to safety, if the implementation of projects described above were to occur concurrently with the Preferred Alternative on Tinker AFB, short-term impacts on safety caused by temporary roadway reconfiguration could potentially cause a short-term adverse cumulative impact on emergency response times for Tinker AFB emergency response vehicles responding to events at the MROTC. However, construction activities would be temporary and ultimately traffic (including emergency response vehicles) on base could be improved with the reconfiguration of roadways, parking areas, and facilities in and adjacent to the military family housing and dormitory residence areas.

Traffic concerns associated with aircraft towing across Douglas Boulevard may be resolved in the future through other proposed actions, including the new St. Anthony Medical Center, which is located near MROTC, and temporary closure of Douglas Boulevard could impact their emergency response. They are a new party that would need to be notified prior to road closures for aircraft towing.

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STATE OF OKLAHOMA }
COUNTY OF OKLAHOMA } ss.

Affidavit of Publication

Diana Calame, of lawful age, being first
duly sworn, upon oath deposes and says that he is the rep
of The Oklahoma Publishing Company, a corporation, which is the publisher of the
The Oklahoman which is a daily newspaper
of general circulation in the State of Oklahoma, and which is a daily newspaper
published in Oklahoma County and having paid general circulation therein; that
said newspaper has been continuously and uninterruptedly published in said coun-
ty and state for a period of more than one hundred and four consecutive weeks next
prior to the first publication of the notice attached hereto, and that said notice was
published in the following issues of said newspaper, namely:
you & me Feb

Subscribed and sworn to before me this 22nd
day of February, 2013
Diannal Featherston Notary Public Diana Calame
My commission expires April 1, 2013



special effects," Thomp-
son said.

laughing at the end.
Thompson's career is
heavy on drama. But those

"Saving Mr. Banks"

MCT INFORMATION SERVICES

Public Notice

**Tinker Air Force Base Invites Public Comment
Environmental Assessment
Maintenance, Repair, and Overhaul Technology Center Acquisition**

The United States Air Force has prepared an Environmental Assessment (EA) which is available for public review and comment.

Pursuant to the Council on Environmental Quality (CEQ) regulations and in accordance with the National Environmental Policy Act, an environmental assessment has been performed for a proposed seven-year lease of SE 53th Street and Douglas Boulevard. The proposed lease will supply hangar space to the Oklahoma City Air Logistics Complex to help alleviate critical aircraft hangar space constraints.

The MROTC is located on 52 acres next to Tinker AFB. It has three full service aircraft maintenance hangars (totaling 156,254 square feet), aircraft aprons, an administrative area, an aircraft operations ramp and tow-way connecting the MROTC across Douglas Boulevard to Tinker AFB. The property is owned by the Oklahoma Industries Authority (OIA), an Oklahoma public trust, whom leases the property to MROTC Development Partners (MDP), whom in turn currently subleases the property to the Boeing Company.

No significant environmental impacts were identified through the EA.

The public is invited to review the draft assessment and make comments. Written comments and questions are required to be submitted to Tinker AFB by close of business, 8 March 2013.

The final draft for the Environment Assessment is available to the public at the Tinker Information Repository located in the Midwest City Public Library on Reno Avenue. Hours of operation are 9:00 a.m. to 9:00 p.m., Monday thru Thursday; 9:00 a.m. to 5:00 p.m., Friday and Saturday; and 1:00 to 5:00 p.m. on Sunday.

The public may submit written comments to the address below:
72d Air Base Wing Public Affairs Office
Brión Ockenfels
7460 Arnold Ave., Suite 127
Tinker Air Force Base, Oklahoma 73145
Phone: 405-739-2027/28
E-mail: brión.ockenfels@tinker.af.mil

This is to verify that Midwest City Library has received the CD-R labeled 0075 MROTC DRAFT EA on 22 Feb 2013.

Thank you.



Tracey Thompson
Assistant Manager
Midwest City Library
8143 E Reno
Midwest City, OK 73110

Figure 6.1. Daily Oklahoman/Midwest City Library Public Notification



DEPARTMENT OF THE AIR FORCE
HEADQUARTERS 72D AIR BASE WING (AFMC)
TINKER AIR FORCE BASE, OKLAHOMA

MEMORANDUM FOR SEE DISTRIBUTION LIST

22 March 2013

FROM: 72 ABW/CE
7535 Fifth Street, Building 400
Tinker AFB, OK 73145

SUBJECT: Notification of Environmental Assessment (EA) and Public Involvement, Maintenance Repair Overhaul Technology Center (MROTC)

1. Tinker Air Force Base (AFB) has prepared an EA in accordance with the National Environmental Policy Act (NEPA) and placed this document for public review and comment. This EA analyzes the potential environmental and socioeconomic impacts associated with the proposed long-term lease of the Boeing MROTC located on the northeast corner of SE 59th Street and Douglas Boulevard. The proposed lease would supply hangar space to the Oklahoma City Air Logistics Complex to help alleviate critical aircraft hangar space constraints. The MROTC is approximately 52 acres and is comprised of three full service maintenance hangars, aircraft aprons, an administrative area, an aircraft operations ramp and tow-way connecting the MROTC across Douglas Boulevard to Tinker AFB. The property is owned by the Oklahoma Industries Authority (OIA), an Oklahoma public trust, whom leases the property to MROTC Development Partners, whom in turn currently leases the property to the Boeing Company.
2. No significant environmental or socioeconomic impacts were identified through the EA process. The investigation resulted in a Finding of No Significant Impact.
3. The draft EA is available for review at the Tinker Information Repository in the Midwest City Public Library at 8143 East Reno Avenue, Midwest City, Oklahoma. Hours of operations are 9:00 a.m. to 9:00 p.m., Monday through Thursday; 9:00 a.m. to 6:00 p.m., Friday; 9:00 a.m. to 5:00 p.m., Saturday; and 1:00 to 6:00 p.m. on Sunday.
4. Please provide any comments or questions by Close of Business (COB), 8 March 2013. Thank you for your assistance with this matter and we look forward to your involvement with this project. If you would prefer that we send an electronic copy to your office please e-mail me directly at cynthia.garrett@tinker.af.mil, or call (405) 734-2097.

A handwritten signature in cursive script that reads "Cindy Garrett".

CINDY GARRETT, Environmental Engineer
NEPA Program Manager
Tinker Air Force Base

Attachment
Project Location Maps

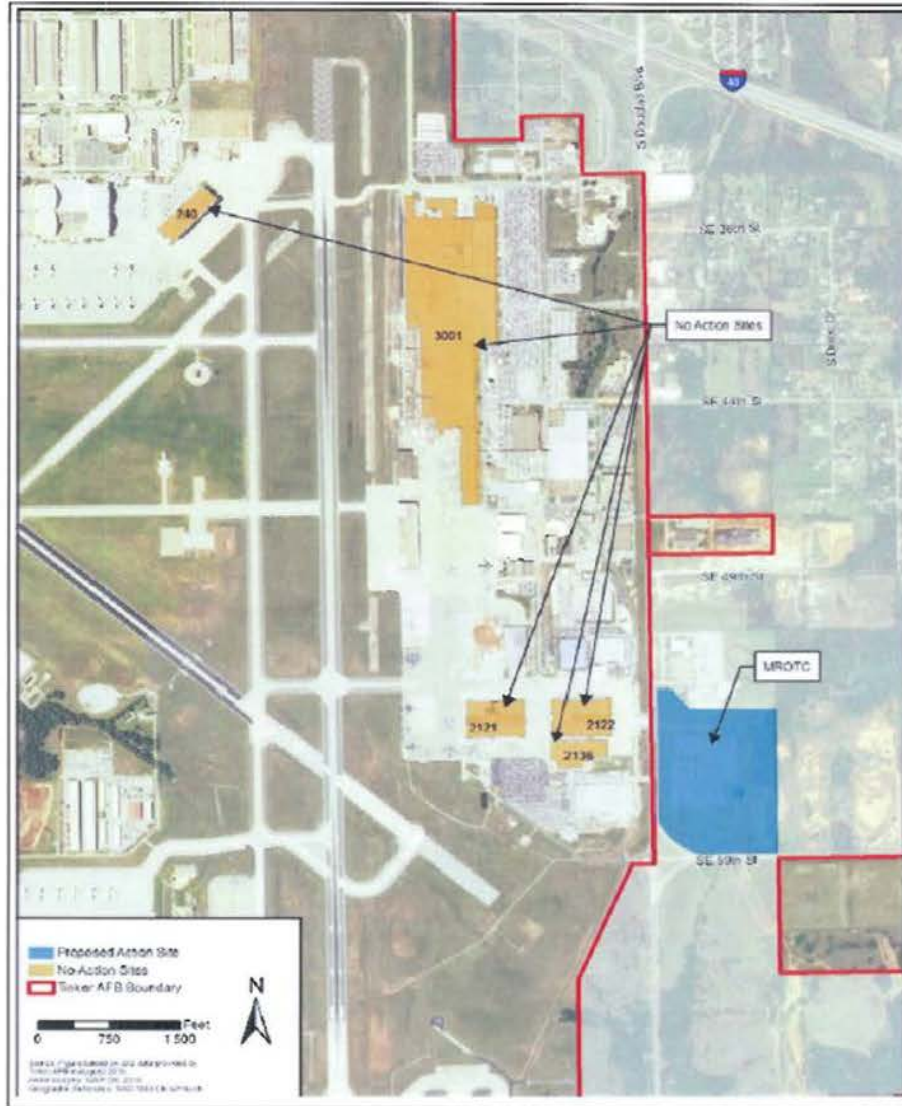


Figure 1. Location of Proposed Action at Tinker AFB



**Figure 2. Location of MROTC
on Douglas Boulevard**

Project Location Maps

Distribution List:

Association of Central Oklahoma Governments
Audubon Society of Central Oklahoma
City of Del City
City of Midwest City
City of Oklahoma City, Planning Department
City of Oklahoma City, Ward Four
EPA Region VI, Compliance Assurance and Enforcement Division (6EN-XP)
Federal Emergency Management Association (FEMA)
Greater Oklahoma City Chamber of Commerce, Government Relations
Oklahoma Corporation Commission
Oklahoma County, District Two
Oklahoma Department of Environmental Quality, Customer Services Division
Oklahoma Department of Transportation, Planning and Research Division
Oklahoma Department of Wildlife Conservation
Oklahoma Geologic Survey
Oklahoma Water Resources Board, Planning and Management Division
Oklahoma Wildlife Federation
Sierra Club, Oklahoma Chapter
State Historic Preservation Office (SHPO) (Oklahoma)
The Osage Nation
The Muscogee (Creek) Nation
The Seminole Nation of Oklahoma
Tinker AFB Community Advisory Board Members
U.S. Army Corps of Engineers, Tulsa District, Planning and Environmental Division
U.S. Department of Agriculture, Natural Resources Conservation Service
U.S. Fish and Wildlife Service, Division of Ecological Services

Figure 6-2. Public Notification Letter

SECTION 7.0
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