FINAL

ENVIRONMENTAL ASSESSMENT FOR THE CONSTRUCTION OF A THREE-BAY MULTI-AIRCRAFT HANGAR TINKER AIR FORCE BASE, OKLAHOMA

KC-135

January 2008

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FINDING OF NO SIGNIFICANT IMPACT ENVIRONMENTAL ASSESSMENT FOR THE CONSTRUCTION OF A THREE-BAY MULTI-AIRCRAFT HANGAR TINKER AIR FORCE BASE, OKLAHOMA

AGENCY

United States Air Force, Air Force Materiel Command

BACKGROUND

Pursuant to the Council on Environmental Quality (CEQ) Regulations [40 Code of Federal Regulations (CFR) Parts 1500–1508] for implementing the procedural provisions of the National Environmental Policy Act (NEPA) (42 U.S.C. 4321 et seq.) and 32 CFR 989 (Air Force Environmental Impact Analysis Process), Tinker Air Force Base (AFB) has conducted an Environmental Assessment (EA) of the potential effects associated with the construction of a three-bay multi-aircraft hangar.

Currently, the workload and repairs for the KC-135, E-3, B-1, and B-52 aircraft require the use of 15 docks, which are presently located in three separate facilities and are inadequate in size to fully accommodate the these aircraft and to co-locate the production resources for the KC-135, E-3, B-1, B-52 and the next generation tanker aircraft. In Building 3001, the existing maintenance area has nine KC-135 aircraft docks that share only two hangar doors allowing for movement of only one aircraft in and out of the maintenance area at a time; if the aircraft in the southernmost dock requires movement of all aircraft before it must be moved. The door and structure heights of these docks are also insufficient for the tail of the KC-135 to enter the dock, requiring additional time and cost to modify the aircraft so that it can be moved into the docks. The aircraft controls, especially the vertical stabilizers, have to be installed and rigged outside in the wind and weather. Finally, the docks are too small for production resources that are required to be co-located. This results in movement and storage of parts at remote locations, setting up multiple docks to do segments of production work, and moving aircraft from dock to dock. At present, two fuel docks accommodate the PDM of the KC-135, E-3, B-1 and B-52 aircraft worked each year. Construction of a new hangar facility would compensate for the inability of the KC-135 program to modify existing hangar bays for co-locating workload requirements and provide an adequate number of fuel docks for maintenance of aircraft in a protected environment.

NO ACTION ALTERNATIVE

Under the No Action Alternative, the Air Force would not construct a new hangar to accommodate the requirement to co-locate production resources for KC-135 and the next generation tanker aircraft. The No Action Alternative also would not provide the needed additional fuel dock capacity. Inclusion of a No Action Alternative is prescribed by CEQ regulations; the No Action Alternative serves as a benchmark against which proposed federal actions can be evaluated.

PROPOSED ACTION

The Proposed Action is for the Air Force to construct an approximately 164,763 ft^2, three-bay, multi-aircraft fuel-capable hangar sized for the KC-135, E-3, B-1, and B-52 or the next generation tanker aircraft with support storage and back-shop space, as well as a hydrant system. The Air Force proposes to construct the new facility west of Building 2280 contiguous to the ramp. Maintenance activities associated with the new hangar would consist of general aircraft maintenance and would not include any painting, stripping, or anti-corrosion activities. The facility is planned for construction in Fiscal Year 2009. Electric, water, and sewer utilities would be required for the new facility, and would tie to existing utility lines in the area.

SUMMARY OF FINDINGS

EVALUATION OF THE NO ACTION ALTERNATIVE

Under the No Action Alternative, the Air Force would continue to move and store parts for the KC-135 at remote locations, set up multiple docks to do segments of production work, continue flight control work outside in the wind and weather, perform limited fuel dock capabilities impacting production, and move aircraft from dock to dock. If the aircraft docks are not replaced, Air Force resources will continue to be wasted on group moves of aircraft, which interrupts production momentum. Workload schedules would continue to negatively impact the operational readiness of the entire KC-135, E-3, B-1 and B-52 fleets in the Air Force. Finally, an emergency event could potentially result in the loss of all assets in three of the four docks in Building 3001.

EVALUATION OF THE PROPOSED ACTION

Issues with minimal or no impacts were identified through a preliminary screening process; these issues were not carried forward within the EA for detailed analysis, and include water resources, biological resources, cultural resources, noise, socioeconomics, soils and erosion, safety, land use, and transportation. The following resource areas were analyzed in detail within the EA due to the potential for significant or adverse impacts:

Air Quality: The Air Force has not identified any significant or adverse impacts associated with air quality from implementation of the Proposed Action. Temporary increases in air emissions would occur during the duration of the construction project; however, standard fugitive dust controls would be implemented as part of the Proposed Action.

Installation Restoration Program: The Air Force has not identified any significant or adverse impacts associated with the Installation Restoration Program (IRP) from implementation of the Proposed Action. The proposed project area is part of Contaminated Groundwater Site CG039 and Groundwater Management Subunit (GWMSU) 4A. The Air Force does not anticipate project activities to negatively impact the contaminated groundwater IRP sites. There exists an abandoned fuel line located west of Building 2280 in the footprint of the hangar; before construction activities commence the fuel line would need to be grouted in place or removed. Additionally, workers would be made aware of spill response procedures. If fuel or associated odors are encountered, then project activities must cease immediately and 72 CEG/CEAN must be notified.

Hazardous Waste / Materials: The Air Force has not identified any significant or adverse impacts associated with hazardous materials and/or waste from implementation of the Proposed Action. Isolated areas of fuel-contaminated soil may be present that would need to be removed during the construction and demolition (C&D) process. Soils at the project location would need to be evaluated for contamination prior to disposal. Once characterized, any contaminated soils would need to be disposed of according to the installation's Hazardous Waste Management Plan (HWMP). Prior to C&D activities, project personnel must be made aware of HWMP procedures for the disposal of hazardous waste generated in the process of activities, and they should have a pre-planned rapid response in the event of a fuel spill or a hazardous material release. The activities that would take place in the proposed hangar are currently covered in the Oklahoma City – Air Logistics Center (OC-ALC) Plan 19-2 (2004) for existing PDM docks in Building 3001 and that plan would be implemented at the hangar when the operations commence. However due to changes in standard operation and maintenance procedures portions of the plan would need to be recertified.

Solid Waste: The Air Force has not identified any significant or adverse impacts associated with solid waste from implementation of the Proposed Action. C&D debris generated by the Proposed Action is estimated to represent a maximum of approximately 6% of the annual average amount of waste disposed of at the Southeastern Oklahoma City Landfill if none were to be recycled/reused. This would be a one-time event concluding when the project has been completed. The Air Force does not anticipate adverse impacts associated with solid waste.

Utilities: The Air Force has not identified any significant or adverse impacts associated with utilities from implementation of the Proposed Action. Use of a high-expansion foam fire suppression system would require that used surfactant be placed in an approved NPDES permitted impoundment; additionally, all fire fighting foam products are prohibited from being discharged into the sanitary, industrial waste, and storm sewer systems. The surfactant must be held in a retention basin for a time defined by Tinker AFB, after which it would need to be disposed of as a hazardous waste according to procedures identified in the installation HWMP.

PUBLIC INVOLVEMENT

The Air Force made the Draft Final Environmental Assessment available for public review and comment from 6 July through 20 July 2007. The Air Force placed advertisements in the Oklahoman and the Tinker Take Off, local and installation newspapers respectively, on 6 July 2007 informing the public of the public review period and the location of the document for review: the Tinker Information Repository at the Midwest City Library located at Reno and Midwest Blvd. No comments regarding the proposed project or the Environmental Assessment were submitted to the Air Force by any members of the public.

ENVIRONMENTAL JUSTICE

Activities associated with the No Action Alternative and Proposed Action will not impose adverse environmental effects on adjacent populations. Therefore, no disproportionately high and adverse effects will occur to minority and low-income populations.

DECISION

Based on my review of the facts and analyses contained in the environmental analysis which is incorporated by reference, I conclude that implementation of the Proposed Action will not have a significant impact either by itself or when considering cumulative impacts. Accordingly, requirements of NEPA, regulations promulgated by the CEQ, and 32 CFR 989 are fulfilled and an environmental impact statement is not required.

FEB 2 2 2008

MARK A. CORRELL, Colonel, USAF
Installation Commander

Date

FINAL

ENVIRONMENTAL ASSESSMENT FOR THE CONSTRUCTION OF A THREE-BAY MULTI-AIRCRAFT HANGAR TINKER AIR FORCE BASE, OKLAHOMA

JANUARY 2008

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SAIC®

From Science to Solutions

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ACRONYMS, ABBREVIATIONS, AND SYMBOLS

ACAM	Air Conformity Applicability Model
AF	Air Force
AFB	Air Force Base
AFI	Air Force Instruction
AFPD	Air Force Policy Directive
ALC	Air Logistics Center
BMP	Best Management Practice
C&D	Construction and Demolition
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
CO	Carbon Monoxide
DCA	Dichloroethane
DCE	Dichloroethene
DERP	Defense Environmental Restoration Program
DoD	U.S. Department of Defense
EA	Environmental Assessment
EIAP	Environmental Impact Analysis Process
EO	Executive Order
EPA	U.S. Environmental Protection Agency
FY	Fiscal Year
GWMSU	Groundwater Management Subunit
HVAC	Heating, Ventilation, and Cooling
HWBZ	Hennessey Water-Bearing Zone
HWMP	Hazardous Waste Management Plan
IRP	Installation Restoration Program
IWTP	Industrial Wastewater Treatment Plant
LLSZ	Lower-Lower Saturated Zone
LSZ	Lower Saturated Zone
MGD	Millions of Gallons per Day
MSDS	Material Safety Data Sheet
MSW	Municipal Solid Waste
NAAQS	National Ambient Air Quality Standards
NEI	National Emissions Inventory
NEPA	National Environmental Policy Act
NO_x	Nitrogen Oxide
NPDES	National Pollutant Discharge Elimination System
OAC	Oklahoma Administrative Code
OC–ALC	Oklahoma City – Air Logistics Center
ODEQ	Oklahoma Department of Environmental Quality
OG&E	Oklahoma Gas and Electric Company
O.S.	Oklahoma Statue

OSHA	Occupational Safety and Health Administration
PCE	Tetrachloroethene
PDM	Programmed Depot Maintenance
PM_{10}	Particulate matter less than 10 micrometers in size.
POTW	Publicly Owned Treatment Works
PZ	Producing Zone
PWS	Public Water Supply
RCRA	Resource Conservation and Recovery Act
ROI	Region of Influence
SARA	Superfund Amendments and Reauthorization Act
SDWA	Safe Drinking Water Act
SO_2	Sulfur Dioxide
SWAP	Source Water Assessment Program
SWMU	Solid Waste Management Unit
TCE	Trichloroethene
TSDF	Treatment, Storage, and Disposal Facility
USAF	U. S. Air Force
U.S.C.	U.S. Code
USZ	Upper Saturated Zone
VOC	Volatile Organic Compound

1. PURPOSE AND NEED FOR ACTION

1.1 INTRODUCTION

The U.S. Air Force (USAF) at Tinker Air Force Base (AFB) proposes to construct an approximately 164,763-ft^2 (15,307-m^2), three-bay, multi-aircraft fuel-capable hangar sized for KC-135, E-3, B-1, and B-52, or the next generation tanker aircraft with sufficient space for parts and equipment storage, work areas, and a fuel/defuel hydrant system. The Air Force has developed this Environmental Assessment (EA) to assess the potential environmental impacts of the proposed project and any viable alternatives in accordance with 32 Code of Federal Regulations (CFR) Part 989, the USAF's Environmental Impact Analysis Process (EIAP).

1.2 LOCATION OF THE PROPOSED ACTION

Tinker AFB is located in Oklahoma County, within the city limits of Oklahoma City, Oklahoma. The Base covers more than 5,000 acres and is adjacent to Midwest City to the north and Del City to the west. Oklahoma City is served by Interstate Highways 35, 40, and 44 and Tinker AFB is served by Interstate Highways 40 and 240. Figure 1-1 shows the location of Tinker AFB, the surrounding area, and the relevant highways. Specific to the proposed project, the USAF proposes to construct the hangar along a ramp near the flightline.

1.3 PURPOSE AND NEED FOR THE ACTION

The purpose of the Proposed Action is to accommodate the requirement to co-locate production resources, such as stands, jacks, tools, and parts for KC-135 and the next generation tanker aircraft.

The need is associated with the requirement for the Oklahoma City Air Logistics Center to conduct Programmed Depot Maintenance (PDM) for the KC-135 aircraft. Currently, the workload and repairs require the use of 15 docks, which are presently located in three separate facilities and are inadequate in size to fully accommodate the KC-135. The nine KC-135 docks located in Building 3001 are the focus of this project and the configuration of these docks make movement of aircraft to the docks inefficient. These nine docks share only two hangar doors allowing for movement of only one aircraft in and out of the maintenance area at a time; if the aircraft in the southernmost dock in Building 3001 requires movement, all aircraft before it must be moved.

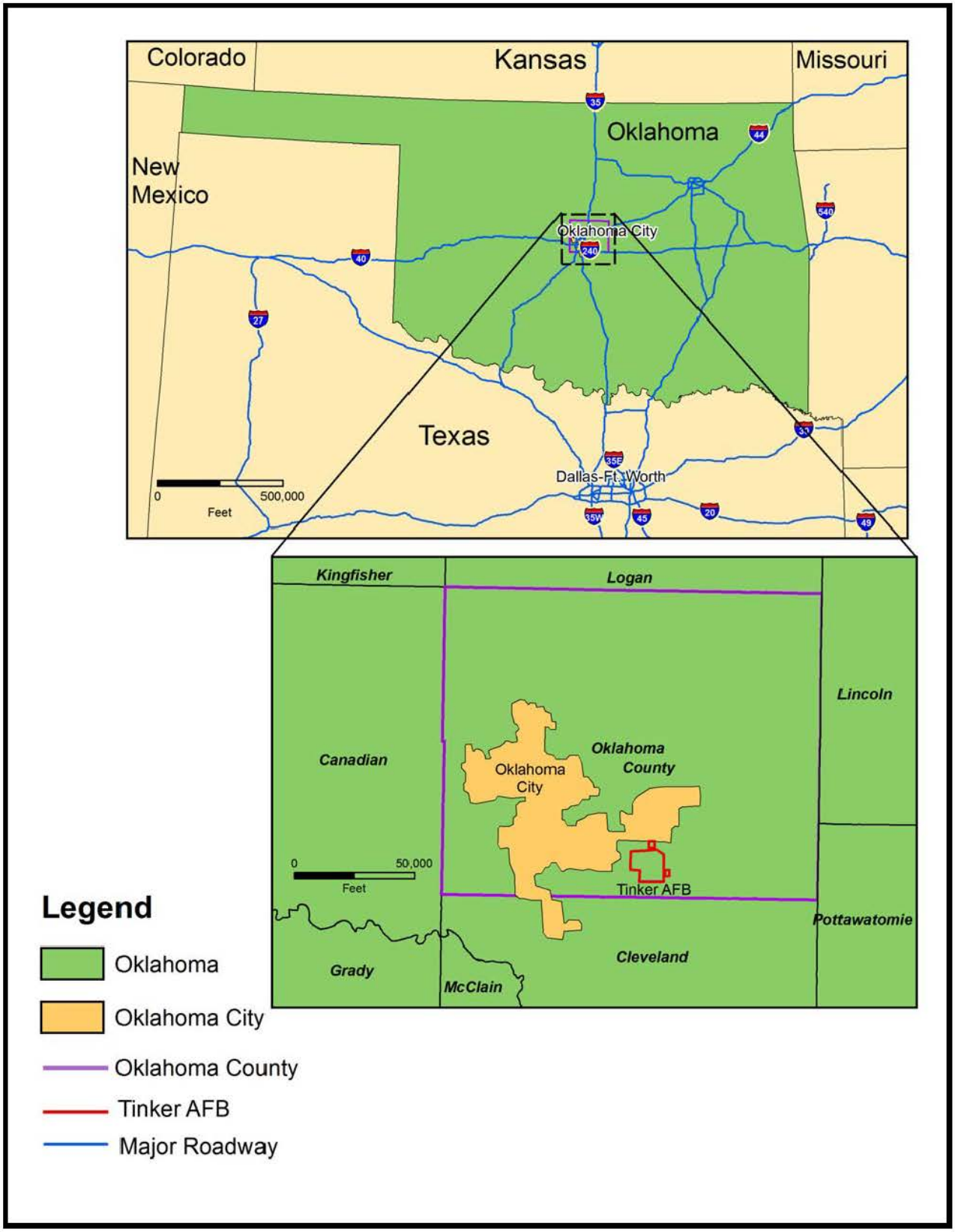

Figure 1-1. Location of Tinker AFB, OK

Finally, the door and structure heights of these docks are insufficient for the tail of a KC-135 to enter the dock, requiring additional time and cost to modify an aircraft so that it can be moved into the docks. The aircraft controls, especially the vertical stabilizers, have to be installed and rigged outside in the wind and weather. At present, two fuel docks accommodate the PDM of the KC-135, E-3, B-1, and B-52 aircraft worked each year.

Currently all nine docks are serviced by two hangar doors and there are plans to modify five docks to provide additional hangar doors. However, all nine docks in Building 3001 would still be too small for production resources that are required to be co-located. This results in movement and storage of parts at remote locations, setting up multiple docks to do segments of production work, and moving aircraft from dock to dock. Also, the inadequate number of fuel docks requires maintenance of aircraft on the ramp. This includes the installation of aircraft control surfaces such as vertical stabilizers, work that is dependent on suitable weather conditions. Construction of a fuel-capable hangar will help alleviate that problem.

1.4 DECISION TO BE MADE

The Air Force will decide, based on the results of the analysis in this EA as well as other economic and operational considerations, whether to proceed with construction of the three-bay hangar through implementation of the Proposed Action, or whether to take no action.

1.5 SCOPE OF THE ENVIRONMENTAL REVIEW

The National Environmental Policy Act (NEPA) of 1969, as amended, requires federal agencies to consider environmental consequences in the decision-making process. The President's Council on Environmental Quality (CEQ) issued regulations to implement NEPA (40 CFR 1500–1508). The Air Force's EIAP provides Air Force-specific procedural rules (32 CFR 989) that supplement CEQ's regulations. These federal regulations establish both the administrative process and substantive scope of the EIAP, which is designed to ensure that deciding authorities have a proper understanding of the potential environmental consequences of a contemplated course of action.

This EA was prepared in accordance with the requirements of NEPA, the CEQ regulations of 1978, and 32 CFR Part 989. To initiate the environmental analysis, the proponent (76th Aircraft Maintenance Group) submitted an Air Force (AF) Form 813, "Request for Environmental Impact Analysis," to the 72nd Air Base Wing (ABW)

Civil Environmental Group, Asset Management, Natural Infrastructure Operations. The 72 CEG/CEAN reviewed the AF Form 813 and determined that the EIAP Working Group should address the Proposed Action.

This EA analyzes the potential environmental impacts that could result from implementation of the Proposed Action or an alternative (including demolition and construction), taking into consideration possible cumulative impacts from other actions in the area. It also identifies required environmental permits relevant to the Proposed Action or alternative actions. As appropriate, the affected environment and environmental consequences of the No Action Alternative, Proposed Action, and alternative actions, may be described in terms of site-specific descriptions or regional overview. Finally, this EA identifies measures to prevent or minimize environmental impacts, if required. The following environmental features were identified for analysis in this EA: air quality, solid waste, Installation Restoration Program (IRP) sites, hazardous materials, and utility infrastructure.

1.5.1 Issues Not Carried Forward for Detailed Analyses

Issues with minimal or no impacts were identified through a preliminary screening process. The following describes the issues that were not carried forward for a detailed analysis and the rationale associated with their elimination:

- ***Water Resources:*** No impacts to water resources are anticipated. Proposed construction would occur on the ramp, and therefore there would be no increase in impervious surfaces; consequently, Tinker's storm water permits are not anticipated to be affected. The proposed project would not infringe on any wetland areas or floodplains. Activities proposed under this action are currently ongoing at Tinker AFB and consist of general maintenance; no painting, stripping, or anti-corrosion practices would occur and no additional or new pollutant sources that could impact sanitary sewer, wastewater, or storm water are expected. Wastewater, mop water, and other storm waters would be handled according to current practices and requirements at the installation for the same activities.
- ***Biological Resources*:** No impacts to biological resources are anticipated. The proposed project would occur on the ramp, within a highly developed area of the installation. There are no natural resource concerns associated with the proposed location.

- ***Environmental Justice:*** Executive Order (EO) 12898, "Federal Actions to Address Environmental Justice in Minority Populations and Low Income Populations," requires federal agencies to identify community issues of concern during the NEPA process, particularly those issues relating to decisions that may have an impact on low-income or minority populations. The construction and demolition (C&D) activities associated with the Proposed Action would not affect any low-income or minority populations. No impacts associated with environmental justice are anticipated.
- ***Protection of Children:*** EO 13045, "Protection of Children from Environmental Health Risks and Safety Risks," mandates that all federal agencies assign a high priority to addressing health and safety risks to children. The EO also requires that federal agencies coordinate research priorities on children's health and ensure that their standards take into account special risks to children. C&D activities associated with the proposed project would not expose children to elevated health and safety risks as the proposed locations are not residential areas or utilized for recreation. No impacts associated with protection of children are anticipated.
- ***Cultural Resources:*** No impacts to historical buildings are anticipated; the historic district is located well away from the proposed project. There are no archaeological resources located within the proposed location.
- ***Noise:*** Noise impacts would be associated with C&D activities. However, noise would be confined to the localized construction area, which is within the ramp area. The construction area would be sectioned off to keep aircraft/ramp personnel out of the area. Construction noise would be insignificant in relation to noise associated with airfield operations. Therefore, no adverse impacts associated with noise are anticipated.
- ***Socioeconomics:*** Socioeconomic impacts are the impacts associated with monetary expenditures from C&D activities. The USAF will be utilizing contractors to do the C&D work for this project. The socioeconomic impacts would be minor in scope, and it is likely that there would be no new jobs created as the C&D would utilize workers from the local labor pool.
- ***Soils and Erosion:*** No impacts to soils and erosion are anticipated. Proposed construction would occur on the ramp, which is already covered with impervious surface in the project vicinity. The construction activities would essentially "cut out" a footprint in the existing concrete pad for construction of

the new building. In addition, if required there may be some soil removal with the construction of a ramp that is cut-down into the grade. Erosion associated with stormwater runoff is not anticipated.

- ***Safety:*** The United States Army Corps of Engineers and its developing contractors would perform all activities associated with construction in accordance with required instructions and Occupational Safety and Health Administration (OSHA) safety standards. Therefore, no safety issues associated with the Proposed Action are anticipated.
- ***Land Use:*** The current land use designation for the proposed location is Airfield. The land use designation for this area would not change as a result of the Proposed Action. Consequently, no adverse impacts associated with land use are anticipated.
- ***Transportation:*** The Proposed Action may involve intermittent stoppages or slowing of traffic associated with movement of construction equipment. These stoppages are likely to last only a few minutes. As a result, no adverse impacts are anticipated associated with transportation.

1.6 APPLICABLE REGULATORY REQUIREMENTS

No environmental permits or associated regulatory requirements have been identified for the Proposed Action.

NEPA requires that the government provide the public with an opportunity to review and provide input on the proposal and the potential environmental consequences prior to the government decision regarding the Proposed Action and Alternatives. The Air Force made the Draft Final Environmental Assessment available for public review and comment from 6 July through 20 July 2007. The Air Force placed advertisements in the Oklahoman and the Tinker Take Off, local and installation newspapers respectively, on 6 July 2007 informing the public of the public review period and the location of the document for review: the Tinker Information Repository at the Midwest City Library located at Reno and Midwest Blvd. No comments regarding the proposed project or the Environmental Assessment were submitted to the Air Force by any members of the public. Copies of the public advertisements are located in Appendix B of this document.

1.7 ORGANIZATION OF THE DOCUMENT

This EA follows the requirements established by CEQ regulations (40 CFR, Parts 1500–1508). This document consists of the following chapters:

1. Purpose and Need for Action,
2. Description of the Proposed Action and Alternatives,
3. Affected Environment and Environmental Analysis,
4. Cumulative Impacts,
5. List of Preparers,
6. Persons and Agencies Contacted, and
7. References

Appendix A – Air Quality
Appendix B – Public Involvement

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2. DESCRIPTION OF THE PROPOSED ACTION AND ALTERNATIVES

2.1 INTRODUCTION

This chapter describes the process by which the Air Force formulated alternatives for implementation of the Proposed Action, the alternatives the Air Force considered but did not carry forward, the No Action Alternative, and the Proposed Action. A summary of potential environmental impacts associated with the Proposed Action and the alternatives is provided at the end of this chapter.

2.2 FORMULATION OF ALTERNATIVES

In February 2005 the Air Force conducted an economic analysis to identify potential alternatives associated with accommodating the purpose and need for aircraft PDM requirements. The economic analysis considered economic factors to identify potential alternatives that would meet the underlying purpose and need, while at the same time ensuring that implementation of the project would be financially viable given fiscal constraints.

2.2.1 Alternatives Considered But Eliminated

The economic analysis conducted by the Air Force identified five potential alternatives for meeting the underlying purpose and need for the PDM requirements; however, based on the results of the economic analysis, only two alternatives were carried forward. The following describes the alternatives considered under the economic analysis:

- ***Renovate the Current Facility*** – Currently, in Building 3001 the main cafeteria and other administrative offices occupy the second floor space that is required to renovate the existing KC-135 aircraft hangars. As a result, an additional facility would be required to accommodate those displaced. Consequently, this alternative was considered infeasible and eliminated from further consideration.

- ***Utilize Other Government Facilities*** – Upon review, it was determined that there are no other known facilities within the government that are equipped to meet the demands of the aircraft PDM workload. Therefore, this alternative was considered infeasible and eliminated from further consideration.

- ***Contract Out the PDM Workload*** – This workload cannot be contracted out due to Congressional mandates under the National Defense Authorization Act, Fiscal Year (FY) 1998 Amendment to U.S. Code (U.S.C.) #2466. As a result, this alternative was considered infeasible and eliminated from further consideration.

- ***Maintain Status Quo*** – Although this alternative does not necessarily meet the underlying purpose and need as stated previously, it is financially viable and NEPA requires the evaluation of the No Action Alternative. Consequently, maintaining the status quo was carried forward for further consideration as the "No Action Alternative."

- ***Construct a New Hangar*** – This alternative was shown to be financially viable and would serve to accommodate the purpose and need of the PDM requirements for the KC-135, E-3, B-1, and B-52. This alternative was carried forward as the "Proposed Action."

2.3 NO ACTION ALTERNATIVE

Under the No Action Alternative, the Air Force would not construct a new hangar to accommodate the requirements associated with KC-135, E-3, B-1, and B-52 PDM. The Air Force would continue to move parts between docks at different buildings and store parts at remote locations, set up multiple docks to do segments of production work, and move aircraft from dock to dock. Also, the Air Force would continue to conduct flight control and fuel cell maintenance of aircraft on the ramp due to the inadequate number of capable docks. If the aircraft docks are not constructed, Air Force resources will continue to be wasted on group moves of aircraft, which interrupts production momentum. Workload schedules would continue to negatively impact the operational readiness of the KC-135, E-3, B-1, and B-52 fleets in the Air Force.

2.4 PROPOSED ACTION

The Proposed Action is for the Air Force to construct an approximately 164,763-ft^2 (15,307-m^2), three-bay, multi-aircraft fuel-capable hangar sized for KC-135 or the next generation tanker aircraft with sufficient space for parts and equipment storage, work areas, and a fuel/defuel hydrant system. The Air Force proposes to construct the new facility west of Building 2280 (Figure 2-1).

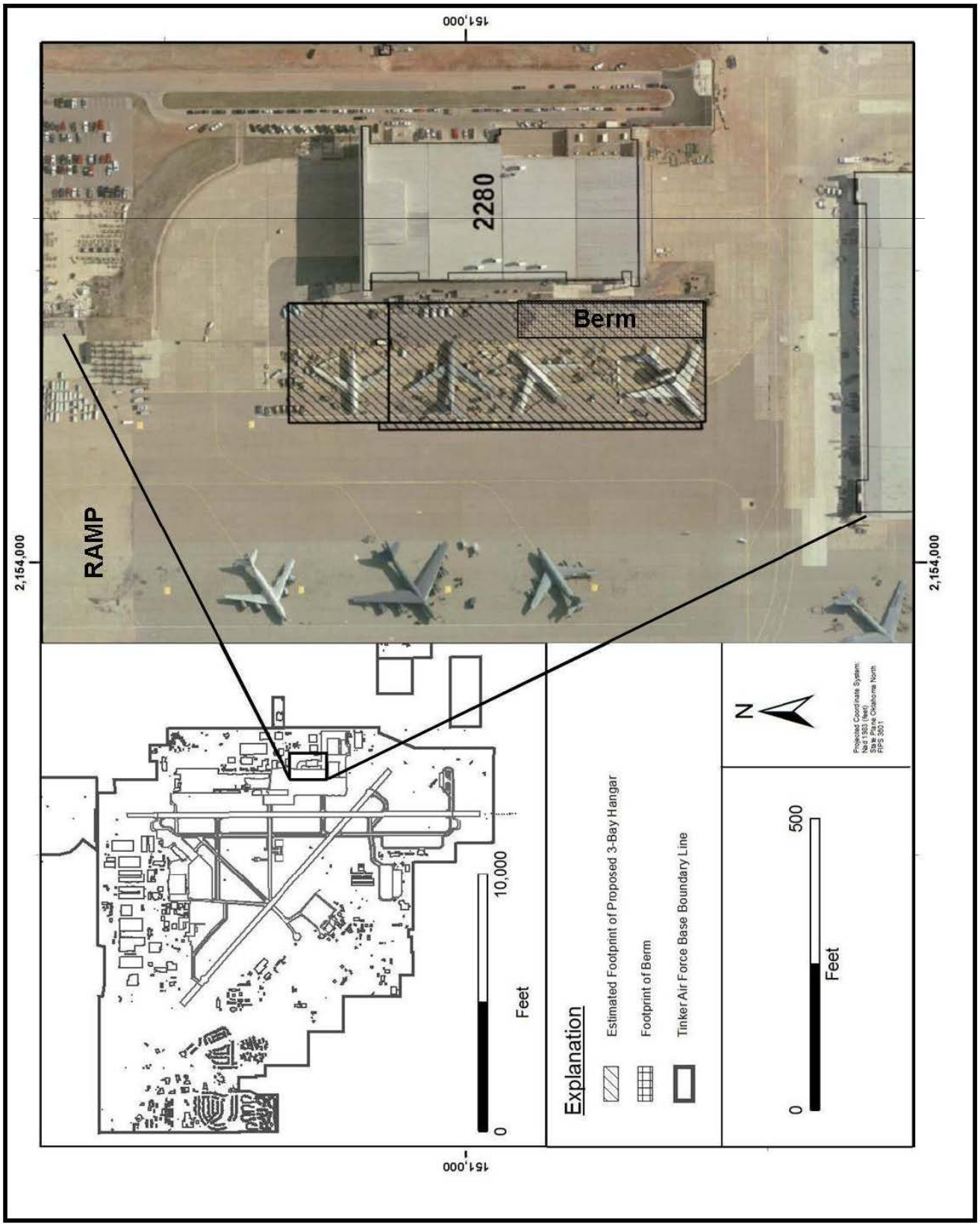

Figure 2-1. Location of the Proposed Action

Construction would require the removal of the existing concrete pad and construction of a new foundation. The hangar would consist of two multi-purpose maintenance bays. The north bay will be capable of handling fueled aircraft. The hangar will be constructed on a drilled pier foundation. The nouth fuel bay will be separated by a wall from the large bay to allow for different types of maintenance work to be conducted in the hangar at the same time. The north bay will utilize the south hydrant of a recently installed ramp hydrant fuel/defuel system. The hydrant system used for the north fuel bay will remain tied into this new fuel system (Gray, 2007).

The minimum inside dimensions of north fuel dock bay would be 215 x 185 and 215 x 485 ft for the large bay. The north fuel bay will be sized for one B-52 or the next generation tanker aircraft. The large bay will be sized for three KC-135s or two B-52 or two next generation tanker aircraft. The large bay would have a vehicle door on the north wall to accesses the north fuel dock. The hangar may also require a ramp to the entry if design considerations find that the local topography provides too much of an upslope for the aircraft to move into the bay(s). The hangar will have to meet the requirements on the maximum building height, tow-way clearances, and 7:1 transitional surface slope as defined in United Facilities Criteria 3-260-01.

Maintenance activities associated with the new hangar would consist of general aircraft, including fuel, maintenance. Some localized painting / stripping that do not require ventilation may occur.

The facility is funded for the design build to be awarded in FY 2009 with expectations that the contractor should begin construction in 2009 and finish construction in approximately two years (Gray, 2007). As part of another unrelated action, the berm indicated in Figure 2-1, located in the footprint of the new facility, has been removed. Electric, water, and sewer utilities would be required for the new facility, and would tie to existing utility lines in the area. Construction would require the removal of the existing concrete pad and construction of a new foundation.

2.5 COMPARISON OF ENVIRONMENTAL IMPACTS OF THE ALTERNATIVES

Table 2-1 provides a comparison of environmental impacts associated with the Proposed Action and No Action Alternative.

Table 2-1. Alternative Impact Summary and Comparison

Resource / Issue Area	Alternative	
	Proposed Action	**No Action**
Air Quality	Temporary increases in air emissions would occur during the duration of the construction project. As compared to Oklahoma County emissions, increases of 0.02% CO, 0.05% NO_x, 0.11% SO_2, and 0.01% VOC would be expected. However, standard fugitive dust controls would be implemented as part of the Proposed Action, and the Air Force has not identified any adverse impacts.	The environment within and adjacent to the ROI would remain as baseline and there would be no impacts associated with air quality beyond the scope of normal conditions and influences at these locations.
Installation Restoration Program	The proposed project area is part of Contaminated Groundwater Site CG039 and GWMSU 4A, and an abandoned fuel line is located west of Building 2280 in the footprint of the hangar. The Air Force does not anticipate project activities to negatively impact the contaminated groundwater IRP sites. If a grade-cut is required for a down-ramp, it is not expected that disturbance of the IRP site would occur. Before C&D activities commence, the fuel line would be grouted in place or removed. Additionally, workers would be made aware of spill response procedures. If fuel or associated odors are encountered, then project activities must cease immediately and 72 CEG/CEAN must be notified.	The environment within and adjacent to the ROI would remain as baseline and there would be no impacts associated with the IRP beyond the scope of normal conditions and influences at these locations.
Hazardous Waste / Materials	Isolated areas of fuel-contaminated soil may be present that would need to be removed during the C&D process. Soils at the location would need to be evaluated for contamination prior to disposal. Once characterized, any contaminated soils would need to be disposed of according to the installation's HWMP. Prior to C&D activities, project personnel must be made aware of HWMP procedures for the disposal of hazardous waste generated in the process of activities, as well as a rapid response in the event of a fuel spill or a hazardous material release. The activities that would take place in the proposed hangar are currently covered in the OC-ALC Plan 19-2 (2004) for the PDM docks and that plan would be implemented at the hangar when the operations commence, with appropriate adaptations with the change in building structure, location, and utilities available. The Air Force does not anticipate adverse impacts associated with hazardous waste/materials from the Proposed Action.	The environment within and adjacent to the ROI would remain as baseline and there would be no impacts associated with hazardous waste / materials beyond the scope of normal conditions and influences at these locations.

Table 2-1. Alternative Impact Summary and Comparison (continued)

Resource / Issue Area	Alternative	
	Proposed Action	**No Action**
Solid Waste	C&D debris generated by the Proposed Action is estimated to represent approximately 6% of the annual average amount of waste disposed of at the Southeast Oklahoma City Landfill. This would be a one-time event concluding when the project has been completed. The Air Force does not anticipate adverse impacts associated with solid waste.	The environment within and adjacent to the ROI would remain as baseline and there would be no impacts associated with solid waste beyond the scope of normal conditions and influences at these locations.
Utilities	The Air Force has not identified any adverse impacts associated with utilities from the Proposed Action. Use of a high-expansion foam fire suppression system would require that used surfactant must not be allowed to enter wastewater drains. The surfactant must be held in a retention basin for a time defined by Tinker AFB, after which it would need to be disposed of as a hazardous waste according to procedures identified in the installation HWMP.	The environment within and adjacent to the ROI would remain as baseline and there would be no impacts associated with utilities beyond the scope of normal conditions and influences at these locations.

CEG/CEAN = Civil Engineering Group/Natural Resources Asset Management Operations
AFB = Air Force Base.
C&D = Construction and demolition.
CO = Carbon monoxide.
GWMSU = Groundwater management subunit.
HWMP = Hazardous Waste Management Plan.
IRP = Installation Restoration Program.
NO_x = Nitrogen oxide.
OC-ALC = Oklahoma City – Air Logistics Center.
PDM = Programmed Depot Maintenance.
ROI = Region of influence.
SO_2 = Sulfur dioxide.
VOC = Volatile organic compound.

3. AFFECTED ENVIRONMENT AND ENVIRONMENTAL ANALYSIS

3.1 AIR QUALITY

Identifying the affected area for an air quality assessment requires knowledge of sources of air emissions, pollutant types, emission rates, and release parameters, as well as proximity to other emissions sources and local conditions. Refer to Appendix A for a review of air quality and the associated methodologies used for emissions calculations.

3.1.1 Definition of the Resource

Air quality is determined by the type and amount of pollutants emitted into the atmosphere, the size and topography of the air basin, and the prevailing meteorological conditions. The levels of pollutants are generally expressed on a concentration basis in units of part per million (ppm) or micrograms per cubic meter ($\mu g/m^3$). For this air quality analysis, the region of influence (ROI) centers on Oklahoma County, Oklahoma, where Tinker AFB is located.

The baseline standards for pollutant concentrations are the National Ambient Air Quality Standards (NAAQS) and state air quality standards. These standards represent the maximum allowable atmospheric concentrations that may occur and still protect public health and welfare. Further discussion of the NAAQS and state air quality standards are included in Appendix A.

3.1.2 Existing Conditions

Oklahoma County is considered an attainment area; therefore, a general conformity analysis is not required.

The Proposed Action is compared to a baseline consisting of Oklahoma County emissions obtained from the U.S. Environmental Protection Agency's (EPA's) 2002 National Emissions Inventory (NEI), which are presented in Table 3-1. The county data include emissions data from point sources, area sources, and mobile sources. Point sources are stationary sources that can be identified by name and location. Area sources are point sources whose emissions are too small to track individually, such as a home or small office building, or a diffuse stationary source, such as wildfires or agricultural tilling. Mobile sources are any kind of vehicle or equipment with a gasoline or diesel engine, an airplane, or a ship. Two types of mobile sources are considered: on-road and

non-road. On-road consists of vehicles such as cars, light trucks, heavy trucks, buses, engines, and motorcycles. Non-road sources are aircraft, locomotives, diesel and gasoline boats and ships, personal watercraft, lawn and garden equipment, agricultural and construction equipment, and recreational vehicles (EPA, 2005).

Table 3-1. Baseline 2002 Emissions Inventory for Oklahoma County

Source Type	Emissions (tons/year)				
	CO	NO_x	PM_{10}	SO_2	VOC
Area Source	2,825	2,371	48,861	204	12,694
Non-Road Mobile	60,012	4,695	379	397	3,522
On-Road Mobile	207,192	22,547	572	974	16,068
Point Source	1,657	3,547	821	256	1,656
Total	***271,686***	***33,160***	***50,633***	***1,831***	***33,940***

Source: EPA, 2002.
CO = Carbon monoxide.
NO_x = Nitrogen oxide.
PM_{10} = Particulate matter less than 10 micrometers in size.
SO_2 = Sulfur dioxide.
VOC = Volatile organic compound.

Tinker AFB operates under a Title V permit issued in May 2005, with one modification made in October 2005. Tinker AFB is an existing major facility with permitted emissions of nitrogen oxides (NO_x), carbon monoxide (CO), and volatile organic compounds (VOCs) each exceeding 250 tons per year. Table 3-2 summarizes Tinker AFB 2005 annual emissions.

Table 3-2. 2005 Air Emissions Inventory Summary for Tinker AFB

Emission Type	Tons per Year
CO	153
NO_x	193
SO_2	12
VOC	286

Source: Wheeler, 2006.
AFB = Air Force Base.
CO = Carbon monoxide.
NO_x = Nitrogen oxide.
SO_2 = Sulfur dioxide.
VOC = Volatile organic compound.

3.1.3 Environmental Analysis

Air emissions from the proposed action C&D activities are the main focus of the air analysis. This includes emissions from heavy construction machinery, semi-tractor trailer rigs, dust (particulate matter) from demolition, and vehicle exhaust from contracted employee's personal vehicles. Air quality issues associated with operational

activities at Tinker AFB after the completion of construction are not included in this evaluation, since operational activities would remain the same, just in a different location along the ramp.

To evaluate the air emissions and their impact to the overall ROI, the emissions associated with the project activities were compared to the total emissions on a pollutant-by-pollutant basis for the ROI's 2002 NEI data. The Air Conformity Applicability Model (ACAM), developed by the U.S. Department of Defense (DoD) and used by the U.S. Air Force for conformity evaluations, was utilized to provide a level of consistency with respect to emissions factors and calculations (USAF, No Date). Air emissions estimated using ACAM were compared to the established 10% criterion for Oklahoma County as represented in the EPA 2002 NEI (EPA, 2002).

Potential impacts to air quality are identified if the total emissions of any pollutant equals 10% or more of the ROI's emissions for that specific pollutant. The 10% criteria approach is used in the General Conformity Rule as an indicator for impact analysis for non-attainment and maintenance areas. Although Oklahoma County is in attainment, the General Conformity Rule's impact analysis is utilized to provide a consistent approach to evaluating the impact of construction and aircraft emissions. To provide a more conservative evaluation, the impacts screening in this analysis uses a more restrictive criteria than required in the General Conformity Rule. Rather than comparing emissions from construction activities to regional inventories (as required in the General Conformity Rule), emissions are compared to the individual county (Oklahoma) potentially impacted, which is a smaller area.

The air analysis focuses on the affects of C&D projects. Construction projects were assumed to be completed during FY 2009. The demolition area of the existing concrete pad was assumed to be the same size as the footprint of the new construction (164,763 ft^2) and 15 in. thick. The berm, removed under a different project, is located in the footprint of the facility and was estimated to be 581 × 129 ft, 15 ft high, composed of earth mixed with gravel fill, and with concrete sides assumed to be 2 in. thick.

3.1.3.1 No Action Alternative

Under the No Action Alternative, the three-bay hangar would not be constructed and the existing berm, fuel pit, and concrete pad would not be removed. Consequently, the environment within and adjacent to the ROI would remain as baseline and there

would be no impacts associated with air quality beyond the scope of normal conditions and influences at these locations.

3.1.3.2 Proposed Action

Construction Emissions. Under the Proposed Action, construction of the hangar would cause a temporary increase in fugitive dust emissions affecting the local air quality. Emissions expected from construction are summarized in Table 3-3. It is assumed that all construction would be completed within one year of the start date. As part of the Proposed Action, best management practices (BMPs) (i.e., wetting down of dirt) would be enacted during C&D activities to minimize potential fugitive dust emissions.

Table 3-3. Proposed Action Construction Air Emissions by Activity

Source Category		Emissions (tons/year)				
		CO	NO_x	PM_{10}	SO_2	VOC
Maximum Annual Emissions	Demolition	0	0	0.084	0	0
	Mobile Equipment	6.552	15.624	1.260	1.932	1.428
	Non-Residential Arch. Ctgs.	0				0.364
	Stationary Equipment	44.436	1.151	0.034	0.059	1.663
	Workers Trips	2.321	0.133	0.019	0	0.142
	Total	***53.309***	***16.908***	***1.397***	***1.991***	***3.598***

CO = Carbon monoxide.
NO_x = Nitrogen oxide.
PM_{10} = Particulate matter less than 10 micrometers in size.
SO_2 = Sulfur dioxide.
VOC = Volatile organic compound.

NO_x, CO, and sulfur dioxides (SO_2) constitute the majority of the emissions from construction activities and the project overall. CO and NO_x are the primary pollutants of concern, constituting 91% of overall project emissions. A majority of the CO emissions are associated with stationary equipment (e.g., saws and generators), while the NO_x emissions are primarily associated with mobile sources. Emissions generated by the Proposed Action are compared to Oklahoma County emissions in Table 3-4.

All emissions would remain below 10% of the region's current air emissions, thus illustrating minimal impact to the air quality in the area. SO_2 emissions would have the greatest percent change (0.11% increase) to the county emissions during the construction activities. While a temporary spike in emissions from construction activities is expected, the Air Force does not expect long-term negative impacts with implementation of the Proposed Action.

Table 3-4. Summary of Tinker AFB Air Emissions Compared to Oklahoma County

Emission Activities	Emissions (tons/year)				
	CO	NO_x	PM_{10}	SO_2	VOC
Construction Emissions	53.31	16.91	1.40	1.99	3.60
Point Source[a]	0.94	1.15	0.08	0.01	0.06
Mobile Source	0				
Total	54.25	18.06	1.48	2.00	3.66
Oklahoma County Emissions	271,686.48	33,159.54	50,632.66	1,830.79	33,940.09
Percentage of County Emissions	***0.02%***	***0.05%***	***0.00%***	***0.11%***	***0.01%***

[a] Point Sources are air emission sources such as facility heating.
AFB = Air Force Base.
CO = Carbon monoxide.
NO_x = Nitrogen oxide.
PM_{10} = Particulate matter less than 10 micrometers in size.
SO_2 = Sulfur dioxide.
VOC = Volatile organic compound.

3.2 INSTALLATION RESTORATION PROGRAM

3.2.1 Definition of the Resource

The IRP was developed to identify, investigate, and cleanup contamination at DoD installations. The IRP was established by the DoD as a response to the Defense Environmental Restoration Program (DERP), enacted by Congress in Title 10 U.S.C. 2701–2707 and 2810, to provide a process of management for the cleanup of DoD hazardous waste sites. The process is uniform with Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) provisions, as amended by the Superfund Amendments and Reauthorization Act (SARA) of 1986, the National Oil and Hazardous Substance Pollution Contingency Plan (40 CFR 300), and EO12580 (DoD, 2001; DoD, 2006). The Resource Conservation and Recovery Act (RCRA) was amended in 1984 with the Hazardous and Solid Waste Amendments, which allow the EPA to require, as a permit condition, a facility to undertake corrective action for any release of hazardous waste or constituents from any Solid Waste Management Unit (SWMU) at a Treatment Storage and Disposal Facility (TSDF) (EPA, 2006a). DoD hazardous waste sites are regulated by CERCLA or RCRA or in some cases, CERCLA and RCRA. Tinker AFB submitted its Part B permit application for renewal of its operating RCRA waste storage facility permit on April 15, 2002 with a Class 2 Modification on November 3, 2005 (ODEQ 2002, 2005).

Congress amended CERCLA through SARA in 1986. SARA waived sovereign immunity for federal facilities and the EPA was given authority to oversee the cleanup of federal facilities. The EPA has the final authority for selecting the remedial action at

federal facilities placed on the National Priority List if the EPA and the relevant federal agency cannot concur on the selection (DOE, 2002). Funding was established for the DoD to remediate its sites because Superfund monies are not available for cleanup of federal facilities. The types of cleanup responses that the fund can be used for are specified by DERP.

3.2.2 Existing Conditions

The proposed hangar would be constructed west of Building 2280 (Figure 2-1). As shown in Figure 3-1, this proposed project area is part of Contaminated Groundwater Site CG039 and Groundwater Management Subunit (GWMSU) 4A (TAFB, 2004). At Building 2280, liquid waste from painting and stripping activities enter floor drains and subsequently transfer through a piping system to a sump and lift station. The waste intercepts the wastewater pipeline that is directed to the Industrial Wastewater Treatment Plant (IWTP) (IT Corp, 2003).

The primary hydrogeologic zones beneath Tinker AFB are the Hennessey Water-Bearing Zone (HWBZ), the Upper Saturated Zone (USZ), the Lower Saturated Zone (LSZ), and the Producing Zone (PZ). The LSZ has been further subdivided into two sub-zones—the lower-lower saturated zone (LLSZ) and the LSZ. The different zones are bounded by aquitards composed of interbedded fine-grained beds that serve as partial hydraulic barriers to cross-aquifer groundwater flow. The HWBZ is part of the Hennessey Group, while the other zones are part of the Garber-Wellington Formation (IT Corp, 2002).

The HWBZ is present in the southwestern portion of Tinker AFB, where the Hennessey thickens and becomes locally saturated with groundwater. The USZ is the uppermost water-bearing zone of the Garber-Wellington Aquifer and is approximately 50 ft thick. The USZ has a large areal extent and occurs throughout Tinker AFB, except in the northeast part and east of the Base and is unconfined. The LSZ, the next lower zone in the Garber-Wellington Aquifer, is approximately 140 to 200 ft thick. The LSZ is extensive and found throughout Tinker AFB; flow is generally to the west and southwest. Groundwater in the LLSZ generally flows to the west–southwest in the same direction as groundwater in the upper parts of the LSZ. The PZ lies below the LLSZ and extends downward approximately another 500 ft. Regional groundwater flow appears to be horizontal; flow direction is influenced locally by production from water supply wells (SAIC, 2006a).

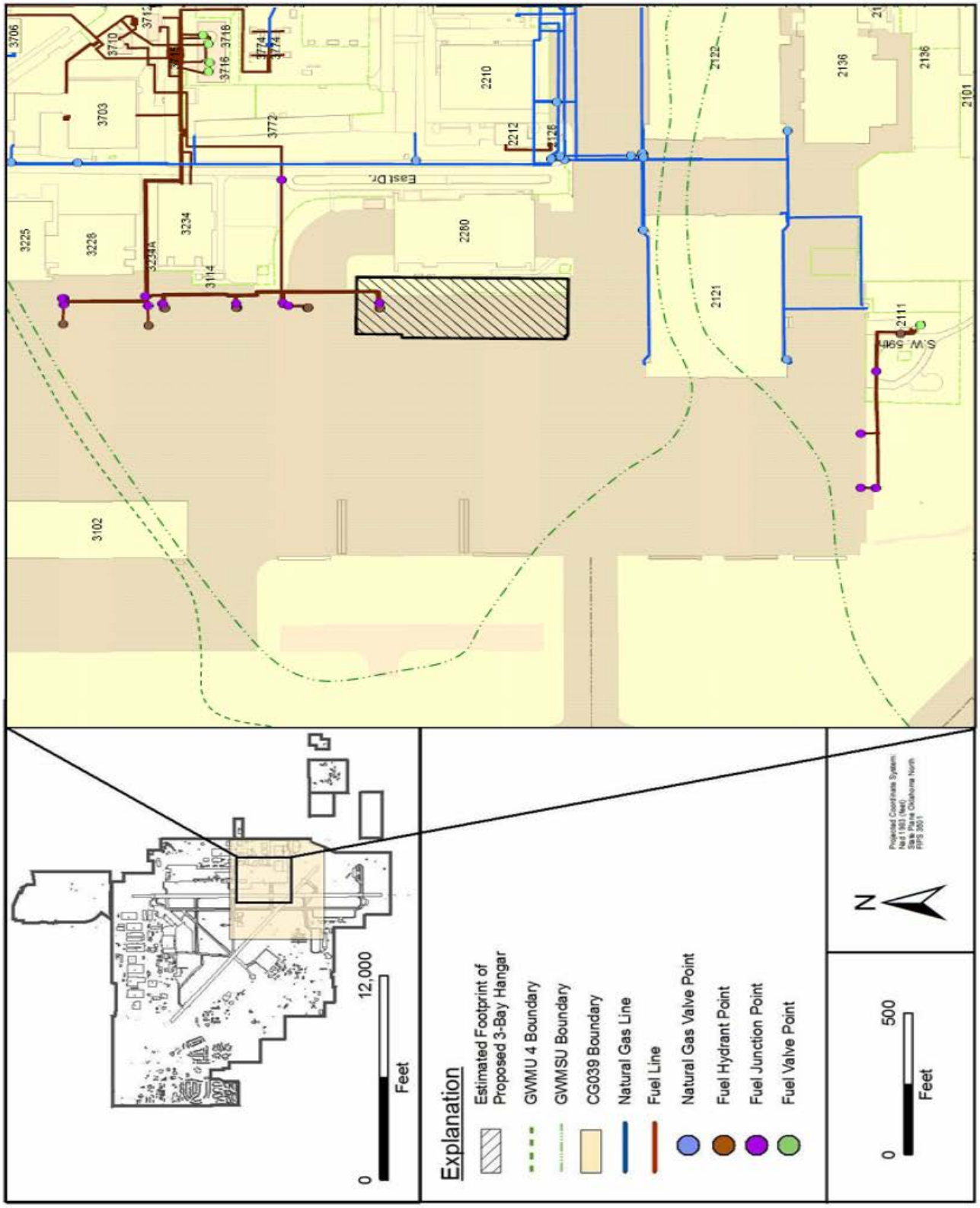

Figure 3-1. Location of IRP Sites and Utilities Near the Proposed Action

Initial groundwater sampling in 1999 indicated that GWMSU 4A was contaminated with high levels of total chlorinated hydrocarbons, specifically trichloroethene (TCE), 1,2-dichloroethane (1,2-DCA), and *cis* -1,2-dichloroethene (DCE). Further groundwater sampling from additional wells in GWMSU 4A turned up low concentrations of methylene chloride, 1,2-DCA, TCE, chloroform, tetrachloroethene (PCE), xylenes, and toluene (IT Corp, 2003).

A CG039 Corrective Measures Study (SAIC, 2006b) has shown that the constituents of concern in the shallow groundwater for GWMSU 4A are TCE, PCE, *cis*-1,2-DCE, 1,2-DCA, and vinyl chloride. To address historic soil contamination and the potential for future soil contamination, it was recommended that Building 2122 have the concrete floor sealed and that groundwater around the surrounding buildings, including Building 2280, continue to be monitored for natural attenuation.

During an upgrade of the facilities in 1996, soil contamination was identified near the hangar door of Building 2122 (about 1,000 ft southeast of Building 2280). Further investigation identified soil contamination along and near joints in the concrete slabs. Soil sampling around the surrounding buildings did not indicate any significant levels of contamination. Additional soil sampling in 1999 did show some soil contamination in the vadose zone by VOCs and semivolatile organic compounds. This contamination was not found around Building 2280 (CH2M Hill, 2002).

3.2.3 Environmental Analysis

This section discusses the potential impacts on the SWMU and GWMSU from the C&D process, as well as the functional activity of the hangar.

3.2.3.1 No Action Alternative

If the No Action Alternative is selected, there would be neither detrimental nor beneficial impacts to the SWMU or GWMSU from demolition of existing structures, construction of the hangar, or the processes that would take place in the hangar. Consequently, the environment within and adjacent to the ROI would remain as baseline, and there would be no impacts associated with IRP sites beyond the scope of normal conditions and influences at these locations.

3.2.3.2 Proposed Action

This project proposes the removal of the existing concrete pad in the footprint of the proposed hangar. There is a potential for impact on the SWMU and GWMSU with the

removal of the concrete pad. In addition, a cut-down for the ramp could disturb the soil, some of which may be contaminated. Design and construction activities would require consideration of this potential to ensure ground disturbance does not negatively impact these sites. There currently exists an abandoned fuel line west of Building 2280 in the footprint of the hangar (Figure 3-1) that would need to be removed or grouted in place prior to commencement of the C&D activities. During the removal process, the potential exists to damage the fuel line, thereby potentially resulting in spills or leaks of any residual fuel. This would negatively impact the SWMU and GWMSU with increased contamination. Consequently, this fuel line would need to be grouted or removed prior to initiation of project activities. Additionally, workers would be made aware of spill response procedures. If fuel or associated odors are encountered, then project activities must cease immediately and 72 CEG/CEAN must be notified.

3.3 HAZARDOUS WASTE AND HAZARDOUS MATERIALS

Hazardous waste is a waste with properties that make it dangerous or potentially harmful to human health or the environment. The universe of hazardous wastes is large and diverse. Hazardous wastes can be liquids, solids, contained gases, or sludges (EPA, 2006b). Hazardous materials in various forms can cause death, serious injury, long-lasting health effects, and damage to buildings, homes, and other property (FEMA, 2006).

3.3.1 Definition of the Resource

RCRA, an amendment to the Solid Waste Disposal Act, was enacted in 1976 to address solid waste and to regulate underground storage tanks. Subtitle C of RCRA establishes a federal program to manage hazardous waste from "cradle to grave" (EPA, 2006c). The EPA delegates the primary responsibility of implementing the RCRA hazardous waste program to individual states in lieu of federal regulations EPA through the state authorization process (EPA, 2006c). The state of Oklahoma has the authority to implement RCRA statutes under the Oklahoma Hazardous Waste Management Act 27A Oklahoma Statute (O.S.) Section 2-7-101 et seq. (TAFB, 2001). The U.S. Air Force policy on hazardous waste management is outlined in Air Force Instruction (AFI) 32-7042 "Solid and Hazardous Waste Compliance," with delegated authority to Tinker AFB to manage the hazardous waste program through the Environmental Management Directorate and the Environmental Management Compliance Division (TAFB, 2001).

The EPA defines hazardous waste generators of less than 220 lbs/month as small quantity generators "Conditionally Exempt" and the Oklahoma Department of Environmental Quality (ODEQ) has no reporting requirements for small quantity generators (EPA, 2006d; ODEQ 2006a). Oklahoma City – Air Logistics Center (OC-ALC) Tinker AFB Instruction 32-7004 "Hazardous Waste Management Instruction" describes the proper storage, handling, and disposal of hazardous waste at Tinker AFB.

Hazardous materials are regulated under SARA Title III (EPA, 2000). ODEQ regulates hazardous materials under Oklahoma Title 252, Chapter 20 "Emergency Planning and Community Right to Know" (ODEQ 2006b). Reportable spills are those spills which in a sufficient quantity for each chemical meet the federal requirement for reporting (ODEQ, 2006c). The list of chemicals and their quantities is known as the "List of Lists" or the "Consolidated List of Chemicals Subject to The Emergency Planning and Community Right to Know Act of 1986 and Section 112(r) of the Clean Air Act" (EPA, 2001). OSHA requires that all employers must maintain Material Safety Data Sheets (MSDSs) for any hazardous chemical stored or used in the work place (CFR 1910 1910.1200 App E). The Hazardous Material Management Program and Pollution Prevention Program at Tinker AFB are described in Tinker AFI Instruction 32-7001 (TAFB 2003).

3.3.2 Existing Conditions

Disposal of hazardous waste has not been allowed on Tinker AFB since 1979. Hazardous waste is not allowed to accumulate at Tinker AFB; hazardous waste is loaded directly onto a tank or dump trucks and transported off-site to a permitted TSDF. Accumulated wastes are stored at Building 808. Dilute industrial wastes and most rinse water are treated at the IWTP and the resulting sludge is disposed of at a TSDF (TAFB, 2001). Historical hazardous waste disposal is the current source of remediation efforts.

The current hazardous material management program at Tinker AFB is focused on minimizing hazardous material use/quantities while still supporting Air Force missions. Hazardous material use and location are also tracked and those data are supplied to the appropriate agencies (TAFB, 2003).

3.3.3 Environmental Analysis

This section discusses the potential impacts to the environment from hazardous material use and hazardous waste generation.

3.3.3.1 No Action Alternative

Under the No Action Alternative, no additional hazardous wastes would be generated from, or hazardous materials utilized for, the demolition of the concrete pad, and the construction of the proposed hangar. Consequently, the environment within and adjacent to the ROI would remain as baseline and there would be no impacts associated with hazardous materials and waste beyond the scope of normal conditions and influences at these locations.

3.3.3.2 Proposed Action

The proposed construction of the three-bay hangar west of Building 2280 would involve both demolition of existing infrastructure and construction of a new building. Both activities potentially could require the use of hazardous materials or generate hazardous waste.

Historical soil sampling around Building 2280 indicates that RCRA contaminants are not present (SAIC, 2006b). However, fueling/defueling activities may have resulted in isolated areas of fuel-contaminated soil that would need to be removed (Hunt, 2006) during the C&D process. Soils at the location would need to be evaluated for contamination prior to disposal. Once characterized, any contaminated soils would need to be disposed of according to the installation's Hazardous Waste Management Plan (HWMP).

In addition, there currently exists an abandoned fuel line in the footprint of the proposed hangar (see Figure 3-1) that would be grouted in place or removed prior to the C&D activities. This presents a potential for damage to the fuel line, which might result in further soil contamination. As mentioned previously, this fuel line should be deactivated and emptied prior to initiation of project activities. Workers must be made aware of spill response procedures. If fuel or associated odors are encountered, project activities must cease immediately and 72 CEG/CEAN must be notified.

Hazardous materials may be used during the construction of the new concrete pad and the hangar; it is expected that all use would be isolated to small quantities, therefore qualifying them as conditionally exempt. Examples of potential hazardous materials used during construction are: solvents, acids, coolants [heating, ventilation, and cooling (HVAC) system], piping compounds, and lubricants. MSDSs of any hazardous materials that are used or stored at the site should be kept on-site and a copy given to the Hazardous Material Management personnel, along with the quantity to be

used/stored. Training should involve proper use/handling, storage, and disposal of hazardous materials.

Prior to C&D activities, project personnel must be made aware of HWMP procedures for the disposal of hazardous waste generated in the process of C&D activities, as well as a rapid response in the event of a fuel spill or a hazardous material release. Training of all employees is necessary, in addition to the display of emergency contact numbers and the emergency plan. The spill response plan and hazardous waste disposal plan should be compliant with the guidelines set forth in the Hazardous Waste Management Instruction (TAFB, 2001) and the OC-ALC Plan 19-2, Spill Prevention and Emergency Response Plan for Hazardous and Extremely Hazardous Material and Spill Prevention Control and Countermeasures (CH2M Hill, 2004).

In addition to the potential for hazardous material use and hazardous waste generation during C&D, hangar operations may require hazardous materials use and therefore may generate hazardous waste. The hangar would have an active fuel line (Kramney, 2006), and work on the aircraft has the potential to utilize various small quantities of hazardous materials such as solvents, lubricants, etc. Care should be taken to follow the guidelines in Tinker HWMP (TAFB, 2003) for proper use, storage, and disposal, as outlined in the Hazardous Waste Management Instruction (TAFB, 2001). The activities that would take place in the proposed hangar are currently covered in the OC-ALC Plan 19-2 (CH2M Hill, 2004) for Aircraft PDM Docks, and that plan should be implemented at the new hangar when operations commence, with appropriate adaptations for the change in building structure, location, and available utilities.

3.4 SOLID WASTE

3.4.1 Definition of the Resource

The Solid Waste Disposal Act (42 U.S.C. 3251 et seq.) established guidelines for solid waste collection, transport, separation, recovery, and disposal systems. RCRA (42 U.S.C. 6901 et seq.) amended this Act by shifting the emphasis from disposal to recycling and reuse of recoverable materials. Oklahoma also has solid waste management regulations pertaining to solid waste facilities, state resource recovery and management programs, certification of resource recovery equipment, used oil and domestic sludge classification, utilization, and disposal criteria. ODEQ develops and adopts rules that govern proper management of solid waste in the state. Most of the responsibility for solid waste management under the law rests with local governments. Generally,

counties operate the solid waste disposal facilities that serve cities and towns within their jurisdictions. This project is subject to federal, state, local, and Air Force regulations because the Proposed Action will occur on Air Force property. If there are conflicting regulations or procedures and protocols, the most stringent should be applied.

Oklahoma operates a variety of permitted solid waste facilities. These facilities include municipal solid waste and C&D landfills, composting, biomedical waste processing, and tire processing facilities, as well as numerous transfer stations throughout the state.

Oklahoma Solid Waste Management Regulations include the following:

- **Oklahoma Solid Waste Management Act - 27A O.S. Supp. 1993, Sections 2-10 et seq.:** The principal state law governing solid waste management requires disposal of wastes at a permitted disposal site. It also requires that counties develop a plan, subject to the Department of Environmental Quality, to provide a solid waste management system to adequately handle solid wastes generated within the boundaries of each county.

- **Oklahoma Administrative Code (OAC) Title 252, Chapter 520 (as amended July 2002, 2002):** Implements the Oklahoma Solid Waste Management Act, and requires that all storage, collection, and transportation to the disposal site shall be according to local ordinances, resolutions, or rules and regulations of the city, town, or county in which services are provided.

- **Oklahoma Article XI – Waste Reduction and Recycling (O.S. §2-11):** Encourages municipalities to develop and operate a recycling program including a minimum of waste paper collection.

Air Force regulatory requirements and management of solid waste are established by Air Force Policy Directive (AFPD) 32-70, Environmental Quality. AFPD 32-70 requires compliance with applicable federal, state, and local environmental laws and standards. For solid waste, AFPD 32-70 is implemented by AFI 32-7042.
AFI 32-7042 requires that each installation have a solid waste management program that includes a solid waste management plan that addresses handling, storage, collection, disposal, and reporting of solid waste. AFI 32-7080 contains the solid waste requirement for preventing pollution through source reduction, resource recovery, and

recycling. Solid waste management programs are managed by the 72 CEG/CEAN on Tinker AFB.

3.4.2 Existing Conditions

Local solid waste is disposed of in landfills located in Oklahoma County. These landfills are operated and maintained either by Oklahoma County or are privately operated. All landfills are permitted by the ODEQ. Because the project will occur in Oklahoma County, the debris will be taken to an Oklahoma County landfill.

Within Oklahoma County there are four municipal solid waste (MSW) landfills and one C&D landfill that serve Oklahoma City and surrounding areas (ODEQ, 2006d). C&D waste is defined as asbestos-free waste, wood waste, yard waste, and residential lead-based paint waste generated during C&D projects (OAC 252:515, Section -1-2) (ODEQ 2006e). Tinker AFB utilizes the Southeast Oklahoma City Landfill, which is classified as a MSW landfill that also accepts C&D wastes (Kline, 2006). The Southeast Oklahoma City Landfill is located approximately 4 miles southeast of Tinker AFB. It is a privately owned and operated landfill consisting of 163 acres and has a life expectancy of approximately 17 years (Bebick, 2006). The average annual amounts of waste taken to landfills in Oklahoma County from 2000 to 2005 are listed in Table 3-5.

Table 3-5. Construction and Demolition Debris Generated in Oklahoma Counties

Calendar Year	Northeast Landfill (tons)	Southeast Oklahoma City Landfill (tons)
2000	29,820.62	446,960.18
2001	117,384.24	413,944.49
2002	104,124.48	404,434.93
2003	130,685.39	406,865.12
2004	178,885.28	383,864.57
2005	142,580.76	383,504.32
Annual Average	117,246.80	406,595.60

Source: ODEQ, 2006f.

3.4.3 Environmental Analysis

This section discusses potential impacts from solid waste generation, which includes both C&D debris from the existing and proposed project areas associated with the alternatives. The wastes generated in this project are expected to be primarily concrete and earth. Analysis focuses on assessing the ability of existing landfill capacity to accommodate increased C&D waste from this project.

3.4.3.1 No Action Alternative

In the No Action Alternative, no additional wastes would be generated from the demolition of existing resources such as the concrete pad and berm and construction of a three-bay hangar. Consequently, the environment within and adjacent to the ROI would remain as baseline and there would be no impacts associated with solid waste beyond the scope of normal conditions and influences at these locations.

3.4.3.2 Proposed Action

This project proposes the construction of a 164,763-ft^2 hangar to accommodate depot PDM aircraft, west of Building 2280. To achieve this, the existing concrete pad and the earth-filled berm would be removed or demolished. The following assumptions, as well as known information, were used to complete this analysis:

- It was assumed that the existing concrete pad is 15 in. thick and is the same size as the footprint of the proposed hangar minus the footprint of the berm previously located onsite (145,307 ft^2).
- The berm (removed under another project) left a dirt footprint of 19,456 ft^2 in the proposed construction site.
- The hangar will have one fuel dock and construction design will utilize the new hydrant pit at Building 2280 and tie into the existing system (Gray, 2007). The abandoned fuel line will need to be grouted in place or removed prior to commencement to C&D activities occurring in this area.

The majority of the waste from the Proposed Action would be generated from the removal of the fill material making up the concrete pad. While the majority of materials removed/demolished may be recycled and reused, if it is assumed that none of the C&D debris is recycled, it is estimated that 14,937 tons of C&D debris would be generated. Disposal of this material would result in an approximate 4% increase in the amount of C&D waste to the Southeast Oklahoma City Landfill during the duration of the project. This increase is based on a comparison to the annual average amount of waste taken to the landfill. The contractor would be responsible for proper disposal of all wastes generated during project actions.

Contractors are encouraged to recycle and reuse waste generated from projects as much as possible. To reduce the tons of waste going to the landfill, the removed concrete could be recycled by having it crushed for use as aggregate. A local recycling

facility that accepts used concrete and asphalt at no charge is located closer to Tinker AFB than the Southeast Oklahoma City Landfill and could be used for the concrete that would be removed from the project site. Possible uses for clean fill material (earth, sand, or gravel) would be fill material elsewhere or landscaping material. The solid wastes generated with this project would not significantly increase the tonnage currently going to the local landfill. Recycle and reuse of the wastes generated would further decrease the amount of waste sent to the landfills. The Air Force does not anticipate adverse impacts to the county landfill.

3.5 UTILITIES

This section discusses utilities serving the existing and proposed project area, which include water supply, wastewater treatment, electricity, and natural gas. Additionally, this section identifies utility providers and the major attributes of utility systems in these areas such as existing capacity and existing demand. Utility locations with respect to the Proposed Action are shown in Figure 3-1.

3.5.1 Definition of the Resource

Potable Water

A public water supply (PWS) system is defined under the Safe Drinking Water Act (SDWA) as a system that provides water via piping or other constructed conveyances to the public for human consumption (ODEQ, 2006g). ODEQ has adopted the federal drinking water standards as identified in the SDWA (42 U.S.C. 201, 300 et seq.) and the National Primary Drinking Water Regulations. The SDWA requires states to develop and implement source water assessment programs (SWAPs) to analyze existing and potential threats to the quality of the public drinking water throughout the state. The EPA approved ODEQ's SWAP, the plan established that all analyses be completed by May 2003, a requirement that ODEQ met (ODEQ, 2006h).

ODEQ governs the PWS via the state of Oklahoma's PWS program. This program oversees 1,717 active PWS systems which meet the federal definition of a PWS. Of the 1,717 active PWS systems in Oklahoma, 246 systems use surface water as their source of water, 830 are groundwater systems, and 641 purchase their water. Currently, 72% of Oklahoma systems are classified as community water systems (such as towns and rural water districts), while the remaining 28% are classified as non-transient, non-community water systems (i.e., schools, factories, or rest stops) (ODEQ, 2006i). Tinker AFB utilizes a community groundwater system, regulated by ODEQ as one of the

830 groundwater systems. A community water system is the classification for towns and rural water districts (ODEQ, 2006i).

Electricity

Oklahoma Gas and Electric (OG&E) Company is the primary electricity provider to Oklahoma County, as well as Tinker AFB. OG&E is headquartered in Oklahoma City and is the parent company of Oklahoma Gas and Electric Services, which is a regulated electric utility serving customers in a service area spanning Oklahoma and Western Arkansas (OG&E, 2006).

Natural Gas

Oklahoma Natural Gas supplies natural gas to much of the state of Oklahoma, including Oklahoma County, with a strong presence throughout the central portion of the state. Oklahoma Natural Gas serves residential, commercial, and industrial customers in Oklahoma. The company has affiliates that operate transmission and gathering operations in Oklahoma, which include 23,748 miles of pipeline and five strategically located underground storage facilities, also located in Oklahoma. Oklahoma Natural Gas maintains and operates 16,978 miles of distribution mains and services (ONEOK, 2006).

3.5.2 Existing Conditions

Potable Water

Potable water used on Tinker AFB is obtained primarily from deep groundwater wells, but the Base also has two tie-ins to the Oklahoma City water supply as a backup. The groundwater wells on Tinker AFB obtain water from the Garber-Wellington Aquifer (Creed, 2006). This water system serves 3,320 residential and 18,742 transient (employees that do not reside on Tinker AFB) people annually, and is utilized during periods of peak demand (ODEQ, 2006b). Environmental Management, Bioenvironmental Engineering Services, and Civil Engineering work together to manage the Base drinking water program (EM-TAFB, 2006).

Wastewater Treatment

Tinker AFB has two different wastewater streams: industrial wastewater and sanitary wastewater. Wastewater generated from bathrooms, showers, drinking fountains, etc. is collected via pipeline and conveyed to a regional station from which it

is sent to the Oklahoma City Publicly Owned Treatment Works (POTW) for treatment. Industrial wastewater is sent to an on-Base IWTP where it is pre-treated and then joins the sanitary wastewater stream for further treatment at the Oklahoma City POTW (Creed, 2006). Environmental Management manages the National Pollutant Discharge Elimination System (NPDES) permit for Tinker AFB. This permit, issued by ODEQ, sets limits for discharging effluent from the IWTP into Soldier Creek and for 13 outfalls located on the Base creek system.

Environmental Management personnel monitor these outfalls weekly and submit monthly reports to the ODEQ. In April 1995, the effluent from the IWTP was rerouted to the Oklahoma City Regional Treatment System, which eliminated the discharge of effluent into Soldier Creek. Now the IWTP provides pretreatment for Base industrial wastewater prior to discharge into the Oklahoma City system and is regulated by a City of Oklahoma City Industrial User Permit (EM-TAFB, 2006).

Electricity

Tinker AFB utilizes electricity from the local power company, OG&E. Electricity is supplied to the Base via four lines, which are not being fully utilized. An electrical substation is located northeast of Building 2280 and infrastructure is in-place in the vicinity of the project site. All electrical lines are below ground west of Building 2280 (Rowden, 2006).

Natural Gas

Natural gas is used primarily for facility heating on Tinker AFB. Natural gas lines run north-south along East Drive, which is located east of Building 2280 and turns to the east along Buildings 2212 and 2210. There are no natural gas lines located at the proposed three-bay hangar site (Figure 3-1).

Other

Other utility lines that would be utilized or would need to be worked around are the compressed-air lines and the fuel lines. Compressed-air is located in lines that run north-south on the east side of East Drive with lines running west-east at various points. A line northwest of Building 2280, running north-south, may be located in the footprint of the Proposed Action (Figure 3-1). There is a new hydrant pit located northwest of Building 2280 (Figure 3-1).

3.5.3 Environmental Analysis

3.5.3.1 No Action Alternative

Under the No Action Alternative, no change would occur to the existing utility infrastructure of Tinker AFB. Consequently, the environment within the proposed location would remain as baseline and no impacts associated with utility infrastructure beyond the scope of normal conditions and influences at this location would occur.

3.5.3.2 Proposed Action

Analysis focuses on assessing the ability of existing utility capacity to accommodate increased/decreased utilization; identifying potential problems related to connecting to existing utilities; and identifying and coordinating procedural requirements associated with establishing new utility infrastructure.

Potable Water and Wastewater Treatment

The addition of the proposed hangar would result in minor increases in potable water use and wastewater generation. No additional personnel are proposed with this action. The proposed hangar would require infrastructure to provide potable water to the building, as well as an appropriately sized wastewater collection/transmission system to accommodate the average daily flow.

This analysis uses estimates from the American Water Works Association study of average gallons per square foot per year (gal/ft^2/year) for various commercial and industrial end users. Using data for a manufacturing/industrial type building, the potable water use is 7 gal/ft^2/year (AWWA, 2003). The construction of a 164,763-ft^2 hangar would require 1.15 million gal/year of potable water. This study assumes a 100% contribution to the IWTP, thus an estimated industrial waste water increase of 1.15 million gal/year. This translates to approximately 3,150 gal/day of potable water usage and wastewater generation. Tinker AFB treated wastewater is sent to the North Canadian Plant of the Oklahoma City POTW, which has an average daily flow rate of 45 millions of gallons per day (MGD) and a maximum daily permitted flow rate of 80 MGD (Davis, 2006). The Proposed Action would cause a daily increase in wastewater flow of 0.37% to the IWTP and 0.007% to the Oklahoma City POTW.

Prior to beginning operations in the building and commencement of discharges, the facility would need to complete a new Form 19-3 which describes the volume and concentration of constituents in the discharge of industrial waste from the new hangar.

Proper approval will be needed before discharge can begin. In addition, BMPs would need to be utilized in both the structural design as well as the administrative practices of the hangar to eliminate or minimize discharge to the storm drain. These designs and practices need to be outlined as a site-specific plan and implemented at the hangar. The plan would then be incorporated at the subsequent update of the basewide stormwater pollution prevent plan. No adverse impacts are expected with the implementation of appropriately sized piping to provide potable water, as well as a collection transmission system for wastewater. Implementation of appropriate practices would eliminate or minimize discharges to the local storm drain, reducing the impact to the receiving body.

Electrical and Natural Gas

Natural gas is used to heat steam which will be used to heat the new hangar. The hangar will tie into existing steam piping that is used to heat the surrounding buildings in the area (Gray, 2007). If the installation of a boiler in the three-bay hangar is deemed necessary to provide HVAC or hot water to the facility, coordination with the Civil Engineering, Environmental Air Quality program manager would be required prior to boiler installation since a revision to the Title V Permit may be required.

The Air Force does not expect adverse impacts to the natural gas capacity with the implementation of the Proposed Action. Currently, OG&E provides electricity to all of Tinker AFB. Electrical infrastructure would be required to provide lighting and power for maintenance operations within the proposed hangar. Current electrical use on Tinker AFB is below capacity. However, the area in which the construction is to take place is currently at full capacity and the nearby substation does not have adequate distribution to supply additional electricity to the proposed location. There are projects in process, which are expected to be completed in FY 2009 or FY 2010, to increase the distribution from the substation to the areas surrounding Building 2280 (Rowden, 2006). The construction of this project is expected to occur in FY 2009; thus, coordination would be necessary with Tinker AFB Civil Engineering electrical engineers and planners to verify that adequate resources would be available.

Demolition activities require the contractor go through the dig permit process. Removal of the concrete pad and construction activities would require coordination with all utility providers to ensure that the contractor turns off all potentially affected utilities prior to removal activities. Coordination with utility providers is necessary to identify the exact location of utility lines prior to ground-disturbing activities associated with both construction and removal/demolition.

Existing gas and electric utility lines are available in the area of the Proposed Action which would allow the new construction to be tied into the existing lines. Coordination with Tinker AFB Civil Engineering would be required to ensure adequate infrastructure is in place to provide electricity to the new construction.

Other

Because the proposed hangar would be fuel-ready, a high-expansion foam system would be required for fire suppression. These systems generally require a mixture of fire-suppressing surfactant, water, and a compressed gas such as air or nitrogen. Once the system has been used, the surfactant must not be allowed to go down drains that connect to the wastewater stream (Weber, 2006). Once deployed, proper containment of the high expansion foam is required and three options are available to the new hangar. The new hangar can build a transport pipe to the Duck Pond, a total retention pond of hazardous waste class II (Permit T-02) designed for Building 2122. The second option would be to build a new impound with a transport pipe from the new hangar to the new impoundment. The final option would be to utilize storm drains and downslopes to direct flow to an existing containment area by closing off specific storm drains to prevent the fire suppressant from entering any nearby streams (Weber, 2007). Provided standard operating procedures are implemented, the Air Force does not anticipate adverse impacts to existing utilities from the use of a high-expansion foam system.

There is a new hydrant pit located northwest of Building 2280 (Figure 3-1) that would be utilized in the Proposed Action with the north bay of the three-bay hangar functioning as a fuel dock and all the bays designed for fuel wing work (Figure 3-1) (Gray, 2007).

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4. CUMULATIVE IMPACTS

According to CEQ regulations, a cumulative effects analysis should consider the potential environmental impacts resulting from "the incremental impacts of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency or person undertakes such other actions" (40 CFR 1508.7).

Cumulative effects may occur when there is a relationship between a Proposed Action or alternative and other actions expected to occur in a similar location or during a similar time period. This relationship may or may not be obvious. The effects may then be incremental (increasing) in nature and result in cumulative impacts. Actions overlapping with or in close proximity to the Proposed Action or alternatives can reasonably be expected to have more potential for cumulative effects on "shared resources" than actions that may be geographically separated. Similarly, actions that coincide temporally will tend to offer a higher potential for cumulative effects.

In this environmental analysis, the Air Force has made an effort to identify actions on or near the installation that are under consideration and in the planning stage at this time. These actions are included in the cumulative analysis to the extent that details regarding such actions exist and the actions have a potential to interact with the Proposed Action. Although the level of detail available for those future actions varies, this approach provides the decision maker with the most current information to evaluate the consequences of the Proposed Action. The environmental analysis addresses cumulative impacts to assess the incremental contribution of the action to impacts on affected resources from all factors.

Relevant Past and Present Actions

Existing Base development and operations represent relevant past and present actions that are associated with the impacts of the Proposed Action. In addition, nearby land development and infrastructure improvements such as roads, pipelines, and power transmission lines also have potential impacts on the project. Past and present actions in and around the action areas associated with these activities may have cumulative effect on the local environment.

Relevant Reasonably Foreseeable Actions

Of significance within the context of a cumulative impact analysis associated with C&D activities, are the installation's growth management policy and plans for future development, as encapsulated in the Base General Plan, as well as potential off-Base changes in land use.

According to the Tinker Air Force Base General Plan, there are 54 construction projects and 85 demolition projects planned for the short-term and outlying years (USAF, 2005); this does not include proposed housing privatization initiatives. Tinker AFB has recently completed the Maintenance Repair Overhaul Project, a large facility southeast of the Base.

Over the past several years there has been a large increase in urban-suburban development to the west of Tinker AFB, primarily in areas outside Gott Gate. According to the Base General Plan, there are 7,610 acres of parks and open space within a 3-mile radius of Tinker AFB (USAF, 2005). Based on past, current, and projected future development in the area, the amount of open space is expected to decrease as development continues in areas surrounding the installation. According to the Oklahoma City Southeast Sector Plan (2007), the 2030 land use plan for the southeastern area of Oklahoma City, the area east of the Base is proposed for industrial development and environmental conservation. The land south of the Base is proposed for industrial development, and the land west of the Base is proposed for urban growth.

Analysis of Cumulative Impacts

Given the scope of the Proposed Action and other similar past, present, and reasonably foreseeable future actions within the ROI, potential cumulative impacts may occur in the areas of air quality and solid waste. The project would generate air pollution emissions during construction activities and would, therefore, incrementally contribute to air emissions if other construction projects are initiated within the same timeframe. This increase would relate to regional air quality goals and attainment standards, but the contribution from the project would be negligible. Air emissions associated with the project represent only a small percentage of Oklahoma County's annual emissions. Project emissions would not contribute to other county emissions in any appreciable manner and would be temporary; therefore, the Air Force does not anticipate any long-term cumulative impacts to air quality from the Proposed Action when considered with other similar past, present, or reasonably foreseeable actions.

Incremental impacts associated with solid waste may occur if other C&D projects are initiated at the same time as the Proposed Action. However, the amount of solid waste that would be generated from the Proposed Action would be minor and short term, ending once the project is completed. Consequently, the Air Force does not expect any adverse, long-term impacts associated with solid waste from the Proposed Action when considered with other similar past, present, or reasonably foreseeable actions.

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APPENDIX A

AIR QUALITY

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ACRONYMS

ACAM	Air Conformity Applicability Model
C&D	Construction and Demolition
CAA	Clean Air Act
CEQA	California Environmental Quality Act of 1970
CO	Carbon Monoxide
EPA	U.S. Environmental Protection Agency
HAP	Hazardous Air Pollutant
NAAQS	National Ambient Air Quality Standards
NEI	National Emissions Inventory
NO_x	Nitrogen Oxide
ODEQ	Oklahoma Department of Environmental Quality
PM	Particulate Matter
PSD	Prevention of Significant Deterioration
ROI	Region of Influence
SER	Significant Emissions Rate
SIP	State Implementation Plan
SO_2	Sulfur Dioxide
VOC	Volatile Organic Compound

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AIR QUALITY

This appendix presents an overview of the Clean Air Act (CAA) and the state of Oklahoma air quality program. The appendix also discusses emission factor development and calculations, including assumptions employed in the air quality analyses from the construction and demolition (C&D) activities.

Air Quality Program Overview

National Ambient Air Quality Standards

To protect public health and welfare, the U.S. Environmental Protection Agency (EPA) has developed numerical concentration-based standards or National Ambient Air Quality Standards (NAAQS) for six "criteria" pollutants (based on health-related criteria) under the provisions of the CAA Amendments of 1970. There are two kinds of NAAQS: primary and secondary standards. Primary standards prescribe the maximum permissible concentration in the ambient air to protect public health, including the health of "sensitive" populations such as asthmatics, children, and the elderly. Secondary standards prescribe the maximum concentration or level of air quality required to protect public welfare, including protection against decreased visibility, damage to animals, crops, vegetation, and buildings (40 Code of Federal Regulations Part 51).

The CAA gives states the authority to establish air quality rules and regulations. These rules and regulations must be equivalent to, or more stringent than, the federal program. The Air Quality Division enforcement actions are governed by the Oklahoma Department of Environmental Quality's (ODEQ's) Administrative Procedure for Enforcement dated August 8, 2005, which sets forth the basic tenets guiding the ODEQ enforcement efforts.

Oklahoma has adopted the federal NAAQS. The federal/state ambient air quality standards are presented in Table A-1. Based on measured ambient air pollutant concentrations, the EPA designates areas of the U.S. as having air quality better than (attainment), worse than (non-attainment) the NAAQS, or unclassifiable. Those that cannot be classified on the basis of available information (meeting or not meeting the NAAQS) for a particular pollutant are "unclassifiable" and are treated as attainment until proven otherwise. Attainment areas can be further classified as "maintenance"

Table A-1. National and State Ambient Air Quality Standards

PRIMARY STANDARDS			SECONDARY STANDARDS	
Pollutant	**Average Type**	**Concentration[a]**	**Average Type**	**Concentration[a]**
CO	8-hr[b]	9 ppm (10 mg/m^3)	No secondary standard	
	1-hr[b]	35 ppm (40 mg/m^3)	No secondary standard	
Pb	Maximum Quarterly Average[h]	1.5 ppm	Same as primary standard	
NO_2	Annual Arithmetic Mean[h]	0.053 ppm (100 µg/m^3)	Same as primary standard	
O_3	1-hr[c,j]	0.12 ppm (235 µg/m^3)	Same as primary standard	
	8-hr[i]	0.08 ppm (157 µg/m^3)	Same as primary standard	
PM-10	Annual Arithmetic Mean[d]	50 µg/m^3	Same as primary standard	
	24-hr[e]	150 µg/m^3	Same as primary standard	
PM-2.5	Annual Arithmetic Mean[d,f]	15 µg/m^3	Same as primary standard	
	24-hr[g]	65 µg/m^3	Same as primary standard	
SO_2	Annual Arithmetic Mean[h]	0.03 ppm (80 µg/m^3)	3-hr[b]	0.50 ppm
	24-hr[b]	0.14 ppm (365 µg/m^3)		(1,300 µg/m^3)

Source: ODEQ, 2006a.
[a] Parenthetical value is an approximately equivalent concentration.
[b] Not to be exceeded more than once per year.
[c] Attained when the expected number of days per calendar year with maximum hourly average concentrations above 0.12 ppm is equal to or less than 1, as determined according to Appendix H of the O_3 National Ambient Air Quality Standards.
[d] Not to be exceeded by the 3-year average of the annual mean concentrations.
[e] Not to be exceeded by the 3-year average of the annual 99th percentile concentrations.
[f] May be spatially averaged over several "community-oriented" sites in an area.
[g] Not to be exceeded by the 3-year average of the annual 98th percentile concentrations.
[h] Never to be exceeded.
[i] Not to be exceeded by the fourth highest annual value averaged over a 3-year period.
[j] Revoked for all Oklahoma counties on December 29, 1997.
CO = Carbon monoxide.
Pb = Lead.
NO_2 = Nitrogen oxide.
O_3 = Ozone.
PM = Particulate matter.
ppm = Parts per million.
SO_2 = Sulfur dioxide.

areas. Maintenance areas are those areas previously classified as non-attainment that have successfully reduced air pollutant concentrations below the standard. Maintenance areas are under special maintenance plans and must operate under some of the non-attainment area plans to ensure compliance with the NAAQS. All areas of Oklahoma are in compliance with the NAAQS.

Each state is required to develop a state implementation plan (SIP) that sets forth how CAA provisions will be imposed within the state. The SIP is the primary means for the implementation, maintenance, and enforcement of the measures needed to attain and maintain the NAAQS within each state and includes control measures, emissions limitations, and other provisions required to attain and maintain the ambient air quality standards. The purpose of the SIP is two-fold. First, it must provide a control strategy that will result in the attainment and maintenance of the NAAQS. Second, it must demonstrate that progress is being made in attaining the standards in each non-attainment area.

In attainment areas, major new or modified stationary sources of air emissions in the area are subject to prevention of significant deterioration (PSD) review to ensure that these sources are constructed without causing significant adverse deterioration of the clean air in the area. A major new source is defined as one that has the potential to emit any pollutant regulated under the CAA in amounts equal to or exceeding specific major source thresholds: either 100 or 250 tons/year based on the source's industrial category. A major modification is a physical change or change in the method of operation at an existing major source that causes a significant "net emissions increase" of any regulated pollutant at that source. Table A-2 provides a tabular listing of the PSD significant emissions rate (SER) thresholds for selected criteria pollutants (EPA, 1990: *Draft New Source Review Workshop Manual: Prevention of Significant Deterioration and Nonattainment Permitting*). PSD SER and increment thresholds have been established for PM_{10}, but not for $PM_{2.5}$. It should be noted that mobile source emissions, as well as those associated with construction activities, are excluded from the PSD applicability process. The changes in regional air quality due to the construction would be minimal and temporary with the proposed action thus having little affect on the Base's overall air emissions.

The goal of the PSD program is to: (1) ensure economic growth while preserving existing air quality; (2) protect public health and welfare from adverse effects that might occur even at pollutant levels better than the NAAQS; and (3) preserve, protect, and enhance the air quality in areas of special natural, recreational, scenic, or historic value, such as national parks and wilderness areas. Sources subject to PSD review are required by the CAA to obtain a permit before commencing construction. The permit process requires an extensive review of all other major sources within a 50-mile radius and all Class I areas within a 62-mile radius of the facility. Emissions from any new or

Table A-2. Criteria Pollutant Significant Emissions Rate Increases Under PSD Regulations

Pollutant	Significant Emissions Rate (tons/year)
PM_{10}	15
Total Suspended Particulate (TSP)	25
SO_2	40
NO_x	40
Ozone (VOC)	40
CO	100

Source: Title 40 Code of Federal Regulations Part 51.
CO = Carbon monoxide.
NO_X = Nitrogen oxide.
PM = Particulate matter.
PSD = Prevention of significant deterioration.
SO_2 = Sulfur dioxide.
VOC = Volatile organic compound.

modified source must be controlled using Best Available Control Technology. The air quality, in combination with other PSD sources in the area, must not exceed the maximum allowable incremental increase identified in Table A-3. National parks and wilderness areas are designated as Class I areas, where any appreciable deterioration in air quality is considered significant. Class II areas are those where moderate, well-controlled industrial growth could be permitted. Class III areas allow for greater industrial development.

Table A-3. Federal Allowable Pollutant Concentration Increases Under PSD Regulations

Pollutant	Averaging Time	Maximum Allowable Concentration (µg/m3)		
		Class I	Class II	Class III
PM_{10}	Annual	4	17	34
	24-hr	8	30	60
SO_2	Annual	2	20	40
	24-hr	5	91	182
	3-hr	25	512	700
NO_2	Annual	2.5	25	50

Source: Title 40 Code of Federal Regulations Part 51.
NO_2 = Nitrogen dioxide.
PM = Particulate matter.
SO_2 = Sulfur dioxide.

Oklahoma has an air quality monitoring network consisting of 66 monitors located at 35 sites throughout the state. The network of air quality monitoring stations routinely measures concentrations of the criteria air pollutants in the ambient air (ODEQ, 2006b).

The end-result of this attainment/maintenance analysis is the development of local and statewide strategies for controlling emissions of criteria air pollutants from

stationary and mobile sources. The first step in this process is the annual compilation of the ambient air monitoring results and the second step is the analysis of the monitoring data for general air quality exceedances of the NAAQS, as well as pollutant trends. Currently, the state of Oklahoma is in attainment for all criteria pollutants.

Regulatory Comparisons

To evaluate the air emissions and their impact to the overall region of influence (ROI), the emissions associated with the construction activities were compared to the total emissions on a pollutant-by-pollutant basis for the ROI's 1999 National Emissions Inventory (NEI) data. Potential impacts to air quality are then identified as the total emissions of any pollutant that equals 10% or more of the ROI's emissions for that specific pollutant. The 10% criteria approach is used in the General Conformity Rule as an indicator for impact analysis for non-attainment and maintenance areas and, although the entire state of Oklahoma is in attainment, the General Conformity Rule's impact analysis was utilized to provide a consistent approach to evaluating the impact of construction emissions.

To provide a conservative evaluation, the impacts screening in this analysis used a more restrictive criterion than required in the General Conformity Rule. Rather than comparing emissions from construction activities to regional inventories (as required in the General Conformity Rule), emissions were compared to the individual counties potentially impacted, which is a smaller area.

Project Calculations

Construction Emissions

Construction emissions calculations were completed using the calculation methodologies described in the Air Force Air Conformity Applicability Model (ACAM). As previously indicated, a conformity determination is not required because Oklahoma County is designated "attainment"; thus, the ACAM was used to provide a level of consistency with respect to emissions factors and calculations.

The ACAM evaluates the individual emissions from different sources associated with the construction phases. These sources include grading activities, asphalt paving, construction worker trips, stationary equipment (e.g., saws and generators), non-residential architectural coatings, and mobile equipment emissions (USAF, 2003: *U.S. Air Force Air Conformity Applicability Model Technical Documentation*).

As a result of limited information, certain assumptions were made to develop the air quality analysis. It was assumed that one building would be constructed on 3.8 acres of land in Oklahoma County. Twenty-five percent of the 3.8 acres would be paved. The facility to be constructed was said to be 164,763 ft^2. Based on these assumptions, the construction emissions were calculated using the calculation methodology expressed below.

Grading Activities

Grading activities are divided into grading-equipment emissions and grading-operation emissions. Grading-equipment calculations are combustive emissions from equipment engines and are ascertained in the following manner:

Volatile organic compound (VOC) = .22 (lbs/acre/day) * Acres * DPY1/2,000

Nitrogen oxides (NO_x) = 2.07 (lbs/acre/day) * Acres * DPY1/2,000

Particulate matter less than 10 micrometers in size (PM_{10}) = .17 (lbs/acre/day) * Acres * DPY1/2,000

Carbon dioxide (CO) = .55 (lbs/acre/day) * Acres * DPY1/2,000

Sulfur oxides (SO_2) = .21 (lbs/acre/day) * Acres * DPY1/2,000

where:

Acres = number of gross acres to be graded during Phase I construction;

DPY1 = number of days per year during Phase I construction that are used for grading;

2,000 = conversion factor from pounds to tons;

All emissions are represented as tons per year.

Grading operations are calculated using a similar equation from the Sacramento Air Quality Management District and the South Coast Air Quality Management Districts [Air Quality Thresholds of Significance and California Environmental Quality Act of 1970 (CEQA) Air Quality Handbook]. These calculations include grading and truck-hauling emissions.

PM_{10} (tons/year) =60.7 (lbs/acre/day) * Acres * DPY1/2,000

where:

Acres = number of gross acres to be graded during Phase 1 construction;

DPY1 = number of days per year during Phase I construction that are used for grading;

2,000 = conversion factor from pounds to tons.

Calculations used in the environmental assessment assumed that there were no controls used to reduce fugitive emissions. Also, it was assumed that construction activities would occur within 365 days and grading activities would represent 16% of that total. Therefore, 60 days was the duration established for grading operations. Also, it was assumed that 10% of the total area would be graded. Emissions factors were derived from the Sacramento Air Quality Management District and the South Coast Air Quality Management District (Air Quality Thresholds of Significance and CEQA Air Quality Handbook).

Architectural Coatings

Non-residential architectural coating emissions are released through the evaporation of solvents that are contained in paints, varnishes, primers, and other surface coatings.

VOCSF (lbs/year) = (SQR_GRSQF * 1.63)/2,000

where:

SQR_GRSQF = square root of gross square feet of non-residential building space to be constructed in the given year of construction;

1.63 = emissions factor;

2,000 = conversion factor from pounds to tons.

It was assumed that construction activities would occur within 365 days. After subtracting the grading activities from the estimated overall construction time, the actual construction period was reduced to 305 days. Additionally, it was assumed that the one building was constructed over the period of 1 year at the specified square footage. Emissions factors were derived from the Sacramento Air Quality Management

District and the South Coast Air Quality Management District (Air Quality Thresholds of Significance and CEQA Air Quality Handbook).

Asphalt Paving

VOC emissions are released during asphalt paving and are calculated using the following methodology:

VOCPT (tons/year) = (2.62 lbs/acre) * Acres Paved/2,000

Acres Paved = total number of acres to be paved at the site.

2,000 = conversion factor from pounds to tons.

It was assumed that a minimum of 25% of the overall area (0.9 acres) to be developed would be paved with asphalt. The specific emissions factors used in the calculations were available through Sacramento Air Quality Management and the South Coast Air Quality Management Districts (Air Quality Thresholds of Significance and CEQA Air Quality Handbook).

Construction Worker Trips

Construction worker trips during the construction phases of the project are calculated and represent a function of the square feet of commercial construction.

Trips (trips/day) = .42 (trip/unit/day) * Area of training facilities

Total daily trips are the applied to the following factors depending on the corresponding years.

Years 2005 through 2009:

VOCE = .016 * Trips

NO_xE = .015 * Trips

$PM_{10}E$ = .0022 * Trips

COE = .262 * Trips

Years 2010 and beyond:

VOCE = .012 * Trips

NO_xE = .013 * Trips

$PM_{10}E$ = .0022 * Trips

COE = .262 * Trips

To convert from pounds per day to tons per year:

VOC (tons/year) = VOCE * DPYII/2,000

NO_x (tons/year) = NO_xE * DPYII/2,000

PM_{10} (tons/year) = $PM_{10}E$ * DPYII/2,000

CO (tons/year) = COE * DPYII/2,000

where:

Commercial construction = total square footage of the construction site;

2,000 = conversion factor from pounds to tons;

DPYII = number of days per year during Phase II construction activities.

It was assumed that the total square footage of construction is 164,763 ft^2. Emissions factors were derived from the Sacramento Air Quality Management District and the South Coast Air Quality Management District (Air Quality Thresholds of Significance and CEQA Air Quality Handbook).

Stationary Equipment

Emissions from stationary equipment occur when gasoline-powered equipment (e.g., saws, generators, etc.) is used at the construction site.

VOC = .198 * (GRSQFT) * DPYII/2,000

NO_x = .137 * (GRSQFT) * DPYII/2,000

PM_{10} = .004 * (GRSQFT) * DPYII/2,000

$CO = 5.29 * (GRSQFT) * DPYII/2{,}000$

$SO_2 = .007 * (GRSQFT) * DPYII/2{,}000$

where:

GRSQF = gross square feet of commercial buildings to be constructed during Phase II;

DPYII = number of days per year during Phase II construction;

2,000 = conversion factor from pounds to tons.

It was assumed that the total square footage of construction was 164,763 ft^2. Emissions factors were derived from the Sacramento Air Quality Management District and the South Coast Air Quality Management District (Air Quality Thresholds of Significance and CEQA Air Quality Handbook).

Mobile Equipment

Mobile equipment emissions include pollutant releases associated with forklifts, dump trucks, etc. used during Phase II construction.

$VOC = .17 * (GRSQFT) * DPYII/2{,}000$

$NO_x = 1.86 * (GRSQFT) * DPYII/2{,}000$

$PM_{10} = .15 * (GRSQFT) * DPYII/2{,}000$

$CO = .78 * (GRSQFT) * DPYII/2{,}000$

$SO_2 = .23 * (GRSQFT) * DPYII/2{,}000$

where:

GRSQF = gross square feet of training area to be constructed during Phase II;

DPYII = number of days per year during Phase II construction;

2,000 = conversion factor from pounds to tons.

It was assumed that the total square footage of construction was 164,763 ft^2. Emissions factors were derived from the Sacramento Air Quality Management District and the South Coast Air Quality Management District (Air Quality Thresholds of Significance and CEQA Air Quality Handbook).

Demolition Emissions

Demolition calculations for this environmental impact statement were completed using guidance from GAP Filling PM_{10} Emission Factors for Selected Open Dust Sources (EPA, 2002). Demolition of structures involves two primary sources of emissions: destruction of the building and site removal of debris. Emissions calculations from mechanical dismemberment, debris loading, and on-site truck traffic to remove debris have been individually developed.

Dismemberment of a structure can be estimated using the AP-42 equation for batch drop operations:

$$ED = k\ (.0032) * [(U/5)1.3\ /\ (M/2)1.4]\ lb/ton$$

where

k= .35 for $PM_{10,}$

U = mean wind speed (default = 5 mph),

M = material moisture content (Default = 2%),

And ED = .0011 lbs/ton (with default parameters).

This factor can be modified for waste tonnage and takes into account the impact of structural floor space. The following relationships were determined from a 1976 analysis by Murphy and Chatterjee (1976) of the demolition of 12 commercial brick, concrete, and steel buildings:

where:

1 ft^2 floor space = 10 ft^3 original building volume,

1 ft^3 building volume = .25 ft^3 waste volume,

1 yrd^3 building waste = .5 ton weight,

Mean truck capacity = 30 yrd^3 haulage volume.

From these data, 1 ft^2 of floor space represents .046 tons of waste material, and a revised emission factor related to structural floor space can be obtained:

ED = .0011 lbs/ton * .046 ton/ft^2 = .000051 lbs/ft^2.

The proposed emission factor for debris loading is based on two tests of the filling of trucks with crushed limestone using a front-end loader, which is part of the test basis for the batch drop equation in AP-42, 11.2.3. Crushed limestone was considered closest in composition to the broken brick and plaster found in demolished commercial buildings. The measured emission factors for crushed limestone were .053 and .063 lbs/TSP. To convert the average TSP factor, .058 lbs/ton, to a PM_{10} factor with the source extent of structural floor space as the previously determined estimate of .046 ton/ft^2 and particle size multiplier must be used. The result is the emission factor for debris loading:

EL = k (.058) lb/ton * .046 ton/ft^2

= .00093 lbs/ft^2

where k is .35, and is derived from the recommended particle size multipliers developed by Muleski et al. (1987).

The emissions factor used for on-site truck traffic is based on the unpaved road equation:

E = k (5.9) *(s/12)(S/30)(W/30) .7 * (w/4).5 * (365-P/365) lb/VMT

where:

k= .36 for PM_{10},

s = silt content (default = 12%),

S = truck speed (default = 10 mph),

W = truck weight (default = 22 tons),

w = truck wheels (default = 10 wheels),

p = number of days with precipitation (default = 0 days).

For a demolition site, 10-wheel trucks of mean 22-ton gross weight are estimated to travel 1/4 mile on-site for each round trip to remove dry debris. With this information and default values for the unpaved road equation, the emission factor for on-site truck traffic becomes:

ET = (.36) (5.9) *(12/12)(10/30)(22/30) .7 * (10/4).5 * (365-0/365) lb/VMT = 4.5 lb/VMT

To convert this emissions factor from lb/VMT to lb/ft^2 of structural floor space, it is necessary to use the previously described relationships obtained from Murphy and Chatterjee (1976).

.25mi/30 yd^3 waste * yd^3/ 4 yd^3 volume * 10 yd^3 volume/yd^2 floor space * yd^2/9 ft^2

= .0023 mi/ft^2

and ET = 4.5 lb/VMT * .0023 mi/ft^2 = .01 lb/ft^2

Combining each of the aforementioned factors for building demolition, debris loading, and truck traffic provides a recommend factor of:

E10 = ED+ EL + ET:

= .000051 + .00093 + .01 lb/ft^2

= .011 lb/ft^2

This value was then multiplied by the gross square footage to be demolished to ascertain the PM_{10} emissions for the demolition activities.

National Emissions Inventory

The NEI is operated under EPA's Emission Factor and Inventory Group, which prepares the national database of air emissions information with input from numerous state and local air agencies, from tribes, and from industry. The database contains information on stationary and mobile sources that emit criteria air pollutants and hazardous air pollutants (HAPs). The database includes estimates of annual emissions, by source, of air pollutants in each area of the country, on an annual basis. The NEI includes emission estimates for all 50 states, the District of Columbia, Puerto Rico, and the Virgin Islands. Emission estimates for individual point or major sources (facilities), as well as county level estimates for area, mobile, and other sources, are available for years 1996 and 1999 for criteria pollutants and HAPs.

Criteria air pollutants are those for which EPA has set health-based standards. Four of the six criteria pollutants are included in the NEI database:

- CO,
- NO_x,
- SO_2, and
- PM_{10} and $PM_{2.5}$.

The NEI also includes emissions of VOCs, which are ozone precursors, emitted from motor vehicle fuel distribution and chemical manufacturing, as well as other solvent uses. VOCs react with nitrogen oxides in the atmosphere to form ozone. The NEI database defines three classes of criteria air pollutant sources: point sources, area sources, and mobile sources.

Point sources are stationary sources of emissions, such as an electric power plant, that can be identified by name and location. A "major" source emits a threshold amount (or more) of at least one criteria pollutant, and must be inventoried and reported. Many states also inventory and report stationary sources that emit amounts below the thresholds for each pollutant.

Area sources are small point sources such as a home or office building, or a diffuse stationary source, such as wildfires or agricultural tilling. These sources do not individually produce sufficient emissions to qualify as point sources. Dry cleaners are one example, i.e., a single dry cleaner within an inventory area typically will not qualify

as a point source, but collectively the emissions from all of the dry cleaning facilities in the inventory area may be significant and, therefore, must be included in the inventory.

Mobile sources are any kind of vehicle or equipment with a gasoline or diesel engine, an airplane, or a ship.

The main sources of criteria pollutant emissions data for the NEI are:

- For electric-generating units – EPA's Emission Tracking System /Continuous Emissions Monitoring Data and the U.S. Department of Energy fuel use data.
- For other large stationary sources – state data and older inventories where state data were not submitted.
- For on-road mobile sources – the Federal Highway Administration's estimate of vehicle miles traveled and emission factors from EPA's mobile model.
- For non-road mobile sources – EPA's non-road model.
- For stationary area sources – state data, EPA-developed estimates for some sources, and older inventories where state or EPA data were not submitted.
- State and local environmental agencies supply most of the point source data. EPA's Clean Air Market Program supplies emissions data for electric power plants.

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APPENDIX B

PUBLIC INVOLVEMENT

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NEPA requires that the government provide the public with an opportunity to review and provide input on the proposal and the potential environmental consequences prior to the government decision regarding the Proposed Action and Alternatives. The Air Force made the Draft Final Environmental Assessment available for public review and comment from 6 July through 20 July 2007. The Air Force placed advertisements in the Oklahoman and the Tinker Take Off, local and installation newspapers respectively, on 6 July 2007 informing the public of the public review period and the location of the document for review: the Tinker Information Repository at the Midwest City Library located at Reno and Midwest Blvd. No comments regarding the proposed project or the Environmental Assessment were submitted to the Air Force by any members of the public. Copies of the public advertisements are located in Appendix B of this document.

STATE OF OKLAHOMA,
COUNTY OF OKLAHOMA } SS.

Affidavit of Publication

Gina Calame, of lawful age, being first duly sworn, upon oath deposes and says that he is the A.E. 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 county 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:

June 5 on Thri. 7-6-07

DIANNAH FEATHERSTON NOTARY PUBLIC # 01004204 EXP. 4/01/09 STATE OF OKLAHOMA

Subscribed and sworn to before me this 11th day of July, 20 07

Diannah Featherston Notary Public

Gina Calame

My commission expires April 1, 2009

1031

seum board member Lenny For more information call (405) 238-6300.

Public Notice

Tinker Air Force Base Invites Public Comment
Environmental Assessments

Construction of the Far Field Range
Construction of Three-Bay Hangar
KC-135R Aircraft and 137th Airlift Wing Relocation

The United States Air Force has prepared three Environmental Assessments (EAs) which are available for public review and comment.

Pursuant to the Council on Environmental Quality (CEQ) regulations and in accordance with the National Environmental Policy Act and 32 Code of Federal Regulations (CFR) Part 989, Tinker Air Force Base has performed environmental assessments for the following proposed actions: Relocation of the Far Field Range, Construction of a Three-Bay Multi-Aircraft Hangar, and Re-Alignment Activities Associated with the KC-135R Aircraft and the 137th Airlift Wing Relocation.

No significant environmental effects have been identified through these EAs.

The public may submit written comments during a period of 14 days from the date of this notice. Comments should be mailed to the address below.

The final draft for the Environment Assessment is available to the public at the Tinker Information Repository located in the Midwest City Public Library, Reno at Midwest Boulevard, from 9:00a.m. to 9:00p.m., Monday thru Thursday; from 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.

For more information, contact Brion Ockenfels, 72 ABW/PA

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(405) 739-2027

tion, delivery and fielding of additional aircraft every month. With more than 90 Raptors delivered to date, the F-22 program is running smoothly on all cylinders, according to Brig. Gen. C.D. Moore, 478th AESW commander.

"We're delivering Raptors to the warfighters, and we're pushing the first of four modernization upgrades to the field," Gen. Moore said. "It's been a banner year so far as we continue to deliver the world's only operational

support work in partnering arrangements with industry experts to ensure surge capacity and to comply with Congressional language.

In addition to managing deliveries, securing a multi-year procurement contract, and solidifying Raptor sustainment, 478th AESW officials are driving ongoing modernization efforts to add additional combat capabilities and upgrades to the F-22, encompassing both software and hardware changes.

Public Notice

Tinker Air Force Base Invites Public Comment
Environmental Assessments
Construction of the Far Field Range
Construction of Three-Bay Hangar
KC-135R Aircraft and 137th Airlift Wing Relocation

The United States Air Force has prepared three Environmental Assessments (EAs) which are available for public review and comment.

Pursuant to the Council on Environmental Quality (CEQ) regulations and in accordance with the National Environmental Policy Act and 32 Code of Federal Regulations (CFR) Part 989, Tinker Air Force Base has performed environmental assessments for the following proposed actions: Relocation of the Far Field Range, Construction of a Three-Bay Multi-Aircraft Hangar, and Re-Alignment Activities Associated with the KC-135R Aircraft and the 137th Airlift Wing Relocation.

No significant environmental effects have been identified through these EAs.

The public may submit written comments during a period of 14 days from the date of this notice. Comments should be mailed to the address below.

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