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ENVIRONMENTAL ASSESSMENT,
JOINT AND INTERIM CIVILIAN USE OF
HANGARS 1027 AND 1050
January 1992

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CARSWELL AIR FORCE BASE, TEXAS

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ENVIRONMENTAL ASSESSMENT
January 1992

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JOINT AND INTERIM CIVILIAN USE OF HANGARS 1027 AND 1050,
CARSWELL AFB, TEXAS

FINDING OF NO SIGNIFICANT IMPACT

JOINT AND INTERIM CIVILIAN USE OF HANGARS 1027 AND 1050, CARSWELL AIR FORCE BASE, TEXAS

DESCRIPTION OF PROPOSED ACTION AND ALTERNATIVES

The interim use of Carswell Air Force Base (AFB) is the result of the recommendations by the Defense Base Closure and Realignment Commission of 1991 under Public Law 101-510, Title XXIX (the Defense Base Closure and Realignment Act of 1990). As a result of that action, the Secretary of Defense must begin to close or realign the installations listed in the Commission's report within two years and complete the action within six years. The withdrawal of personnel and closure of Carswell AFB is scheduled to be completed by September 1993.

The Proposed Action is to lease Hangars 1027 and 1050 at Carswell AFB to the city of Fort Worth acting as a member of an inter-local agreement between the cities of Fort Worth, Westworth Village, and White Settlement to redevelop Carswell AFB after its closure. A sublessee would conduct commercial aircraft maintenance and modification in these facilities. The facilities would be jointly used with the Air Force prior to the closure of Carswell AFB. Use of these facilities by the sublessee would require no modification. Joint use would begin in January 1992 and last until September 1993. At that time, Carswell AFB will be closed and new arrangements will be required. The sublessee proposes to perform "C" and "D" checks on Boeing 727 and McDonnell-Douglas DC-9 and MD-80 aircraft.

A "C" check involves a thorough inspection of the entire aircraft after washing. All major aircraft systems are "operationally cycled" while on the ground. Some components that are time-limited are replaced. All items requiring lubrication are serviced and most of the aircraft filters are changed. Under the Proposed Action, any components that require major repair will be sent to an outside facility. No engine overhaul maintenance will be performed under the Proposed Action; however, engine adjustments and replacement of filters and small parts will be accomplished. Additionally, a general cleaning of the aircraft's interior will be accomplished, including servicing of the lavatories and supporting systems. All sanitary wastes will be discharged to the base's sanitary system. The entire "C" check would require about 8 days from arrival to final departure.

A "D" check is a major heavy aircraft inspection. In addition to all the "C" check inspection servicing, the main structural members are examined using non-destructive inspection (NDI) techniques, such as X-rays, and repaired as necessary. All FAA Air-worthiness Directives (ADs) and Service Bulletins are completed at this time.

Arrival, departures and test flights would result in about 30 flight operations (an operation is one take-off or landing) per month, or up to 360 annual flight operations. These flights and the preceeding engine runs would occur between 6 am and 10 pm, unless otherwise approved by the Wing Commander or designee for next day aircraft deliveries.

A total of 200 employees would be associated with the maintenance operations. The 7-day per week, 24-hour operation would include about 100 employees working the day shift (0700-1500), about 65

working swing shift (1500-2300) and 35 employees working the night shift (2300-0700). It is anticipated that the majority of the work force would reside in the local area as the prospective sublessee currently has a large number of employees in this area.

The potential use of other existing maintenance facilities was considered but eliminated from further consideration because Hangars 1027 and 1050 are the only facilities at Carswell AFB which can accommodate the commercial aircraft maintenance operations without major facility modification. In addition, new construction of aircraft maintenance facilities in open areas on base was eliminated from further consideration due to the operational schedule requirements of the sublessee.

This interim and joint use of Carswell AFB by the city of Fort Worth's sublessee Corporation does not prejudice future reuse plans for the Base. The cities in the inter-local agreement are preparing a reuse plan for Carswell AFB which is to be submitted to the Secretary of the Air Force in mid-1992. The Department of the Air Force has made no decision regarding potential reuse of the Base pending the Environmental Impact Statement for Disposal and Reuse and the Reuse Disposal Plan that will be prepared.

Under the No-Action alternative the Air Force would continue present B-52 and KC-135 maintenance operations in Hangars 1027 and 1050. Neither the lease with the city of Fort Worth nor the sublease would take place.

SUMMARY OF ANTICIPATED ENVIRONMENTAL IMPACTS

The interim joint use action would neither alter land use surrounding the base nor restrict future development in that area. The proposed use is consistent with the mission of the base. The following paragraphs summarize the anticipated environmental impacts:

Hazardous/Non-Hazardous Materials and Wastes: The number of personnel and the washing of the additional aircraft will not significantly affect the demands on wastewater treatment facilities. Oil/water separators are in place to separate petroleum products from the wastewater prior to discharge to the sewer and stormwater drainage system. The use and storage of hazardous materials will be in accordance with local, state and federal regulations and will be monitored by Air Force personnel. There will be a small increase in the generation of hazardous waste, but existing disposal plans are adequate to meet the increase. These increases are not expected to have a significant impact. Hazardous wastes will not be stored longer than 90 days in approved containers. Hazardous waste spills would be cleaned up, placed in containers, and disposed of in accordance with applicable regulations to prevent soil and water contamination. The city of Fort Worth and its sublessee will be required to follow the Carswell AFB Spill and Hazardous Waste Management Plan. Since the activity would not occur in areas under the Installation Restoration Program (IRP), no effect on that program is anticipated.

Air Quality: Implementation of the Proposed Action would result in minimal increases in hydrocarbon emissions, thus causing minimal impacts to the regional air quality. These emission increases, however, would be off-set by the decreased aviation operations associated with the Carswell AFB drawdown and closure activities.

Land Use: Temporary land use constraints would be limited to installation of a security fence under this action. The Proposed Action will not affect current on- or off-base land uses during operations.

Noise: The Proposed Action would not significantly increase the current noise levels due to the quieter commercial aircraft and limited flight operations. Overall noise levels are expected to decrease as the Air Force ceases most operations due to base drawdown and closure.

Water Resources: The Proposed Action would not cause impacts to the surface drainage patterns or groundwater characteristics. Increased water demands would be minor and would not cause significant impacts to the water supply sources.

Biological Resources: Implementation of the Proposed Action would not result in significant impacts to biological resources because the action would take place in existing facilities, on paved areas or on previously disturbed and cleared open areas. No federally or state threatened or endangered species are known to occur on the base.

Cultural Resources: Carswell AFB contains no known archeological resources, however, some potential to encounter subsurface resources during the construction of the fenceline does exist. No impacts to historic resources would occur under the Proposed Action.

SUMMARY OF OTHER CONSIDERATIONS

The interim joint use action would have a positive effect on the socioeconomic conditions in the city of Fort Worth and nearby communities. The following paragraphs summarize the anticipated effects:

Socioeconomic Resources: Carswell AFB is located in a highly developed urban area (the Dallas/Ft Worth Metroplex). The interim use is expected to employ approximately 200 personnel. The majority of these employees are expected to already reside in the surrounding area. Positive impacts resulting from employees' salaries are expected to be minimal.

Infrastructure: Small increases in demand on utilities due to the Proposed Action will not significantly impact the existing service infrastructure. The transportation infrastructure will also be only minimally impacted due to Proposed Action vehicular traffic. Existing airfield pavements were designed to support heavy aircraft and are structurally sufficient to support the Proposed Action's aircraft. The Proposed Action would not affect asbestos containing materials because no facility modifications are anticipated.

MITIGATION MEASURES

If any cultural resources are encountered during construction work, work within the area will stop and the Base Historic Preservation Officer or a qualified archeologist should be consulted before construction will be allowed to proceed.

CONCLUSIONS

From a review of the Environmental Assessment (EA), I have concluded this action will not have a significant impact on the environment. This Finding of No Significant Impact (FONSI) is based upon minimal impacts to the human and natural environment. The Air Force, in this decision, as documented in this EA, has employed, and will continue to use all practicable means to minimize the impact of interim joint use of Carswell AFB on the local environment.



GARY D. VEST

Deputy Assistant Secretary of the Air Force
(Environment, Safety and Occupational Health)

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1.0 PURPOSE OF AND NEED FOR THE ACTION

1.1 INTRODUCTION

This environmental assessment (EA) reviews the environmental consequences of a proposed action to lease a portion of Hangar 1050, Hangar 1027 for intermittent use, and supporting infrastructure at Carswell Air Force Base (AFB), Texas, to the city of Fort Worth. The city of Fort Worth is proposing to lease the facilities from the Air Force in support of an inter-local agreement amongst the city of Fort Worth, Westworth Village, and White Settlement to redevelop Carswell AFB after its closure. The city of Fort Worth in the Proposed Action would sublease the facilities to a private firm that would conduct commercial aircraft maintenance.

The decision to close Carswell AFB resulted from its inclusion in recommendations by the Defense Base Closure and Realignment Commission that were sent to the President on 1 July 1991. The President accepted the recommendations and passed them to Congress for review. Under Public Law 101-510, Title XXIX (the Defense Base Closure and Realignment Act of 1990), if Congress does not enact a joint resolution disapproving the Commission's proposals, the Secretary of Defense must begin to close or realign the installations listed in the Commission's report within two years and complete the action within six years. The Congress did not pass a Joint Resolution disapproving the recommendations within the time allotted by the Act. Therefore, the Act now requires the Secretary of Defense, as a matter of law, to implement the closure of Carswell AFB. Thus, the decision to close Carswell AFB is final.

Actions relating to the interim use of Air Force facilities and the eventual disposal of all excess property at Carswell AFB must comply fully with the National Environmental Policy Act (NEPA), as implemented by the President's Council on Environmental Quality (CEQ) Regulations and Air Force Regulation (AFR) 19-2. The action under analysis in this environmental assessment and its consequences are of an interim nature. If a decision is made to proceed with the Proposed Action, a short-term lease will be arranged between the Department of the Air Force and the city of Fort Worth which is currently studying the interim and long-term reuse potential of the base with the other communities mentioned above. No decisions have been or will be made by the Air Force regarding the disposal of the base and its facilities until a separate Environmental Impact Statement (EIS) on the disposal of Carswell AFB has been completed by the Air Force.

1.2 PURPOSE AND NEED

The city of Fort Worth, in an attempt to develop interim use of facilities prior to the closure of Carswell AFB, is working with a potential sublessee on a commercial proposal involving Hangars 1027 and 1050. The sublessee's proposal is to establish a commercial aircraft maintenance and modification satellite operation in a portion of Hangar 1050 with intermittent use of Hangar 1027. There is an urgent need by commercial aircraft fleets for additional quality maintenance centers. The city of Fort Worth's request is for use of the facilities beginning in January 1992 and lasting until September 1993, when the base is scheduled to close and new arrangements will be required.

The city of Fort Worth projects a work force of approximately 200 people, under the interim use proposal. The operation will be 24-hours a day, seven (7) days a week. The day shift (0700-1500) will have approximately 100 people, the swing shift (1500-2300) will have a staff of approximately 65, and the late shift will have approximately 35 people.

In the event the city of Fort Worth's sublessee is authorized to continue use of the facilities after the base closure, their tentative Phase II plans project use of the entire Hangar 1050 plus additional new construction or modification of other existing facilities. Total workers would increase to 1400 people in Phase II. No decision on the initiation of Phase II will be made until the disposal and reuse EIS is complete (scheduled for September 1993).

1.3 SCOPE OF THE ENVIRONMENTAL REVIEW

This EA describes and addresses the potential environmental impacts of an interim, joint civilian use of the existing facilities for aircraft maintenance operations and identifies mitigation measures to reduce or eliminate those potential environmental impacts. This EA also evaluates potential alternatives to the Proposed Action.

Consistent with AFR 19-2 and CEQ regulations, the scope of analysis presented in this EA will be defined by the potential range of environmental impacts that would result from implementation of the Proposed Action. The resources analyzed in this assessment are: hazardous material/wastes, air quality, land use, noise, socioeconomics, infrastructure, water resources, biological resources, and cultural resources. Descriptions of the affected environment and the potential environmental consequences relative to these resources are addressed in Chapters 3.0 and 4.0, respectively.

The assessment indicated that, because of the scale and design of the Proposed Action, implementation would not result in either short- or long-term impacts to the soils. Soils on Carswell AFB consist of clays and loams which have suitable engineering properties for construction. The Proposed Action would require limited ground disturbance for the construction of a new fence line. Because of the limited amount of temporary soil disturbance, impacts to physical resources would not be significant and are not addressed in Chapter 3.0 or 4.0.

1.4 ENVIRONMENTAL REGULATIONS

The city of Fort Worth and its sublessee will be required to design, operate and maintain an environmental compliance program while conducting aircraft maintenance operations at Carswell AFB. The environmental program, staffing and implementation will be reviewed by the Air Force.

The city of Fort Worth and its sublessee will be required to obtain and maintain all applicable permits related to its operations at Carswell AFB such as those for air quality (equipment and operations); hazardous material/waste handling operations; generation of solid and hazardous wastes; and applicable water quality/discharge activities. Furthermore, the city of Fort Worth and its sublessee will be responsible for all required reports to local, state, and federal authorities involving their operations. The city of Fort Worth and its sublessee will remain the primary responsible parties for any spill cleanup or remedial action required by any activity undertaken by the sublessee or its employees.

The city of Fort Worth or its sublessee will be required to maintain a liaison with Carswell AFB environmental personnel. The city of Fort Worth and its sublessee will notify the Air Force of any action requiring notification of federal, state, or local environmental authorities from their activities on Carswell AFB, as the Air Force will retain responsibility for such notifications during interim use.

The city of Fort Worth or its sublessee will be required to comply fully with laws and regulations involving:

- Air Quality:**
- (a) Clean Air Act & Amendments,
 - (b) Texas Clean Air Act of 1967,
 - (c) Texas Air Pollution Control Regulations, and
 - (d) CFR Title 40 Parts 50-52, 61, 62, 65, 66, 67 and 81.
- Hazardous Materials:**
- (a) Hazardous Materials Transportation Act (Department of Transportation requirements)
 - (b) Emergency Planning and Community Right-To-Know (SARA Title III),
 - (c) CFR Title 49 Parts 100-179, and
 - (d) CFR Title 40 Part 302.
- Hazardous Wastes:**
- (a) Resource Conservation and Recovery Act (RCRA) of 1976 and RCRA Amendments of 1984,
 - (b) Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) of 1980,
 - (c) Texas Consolidated Permit Rules,
 - (d) Texas Solid Waste Disposal Act of 1969,
 - (e) Texas Industrial Waste Management Regulations,
 - (f) Texas Hazardous Waste Management Regulations, and
 - (g) CFR Title 40 Parts 260-271, 300, 302.
- Water Quality:**
- (a) Clean Water Act and Amendments,
 - (b) Safe Drinking Water Act,
 - (c) Texas Water Quality Acts of 1967,
 - (d) Texas Wastewater Treatment Regulations, and
 - (e) CFR Title 40 Parts 100-143, 401 and 403.

In addition to meeting ongoing requirements in the public laws set forth above or any other applicable law, the city of Fort Worth has expressed the intention to accommodate any Carswell AFB, federal, state or local agency recommendation and/or substitution with regard to environmental compliance.

The prospective sublessee currently conducts similar aircraft maintenance within the Dallas-Fort Worth area. Representatives from the sublessee have stated the company will ensure environmental compliance through programs of risk reduction and pollution prevention. In proposing this action, the city of Fort Worth has expressed an intention or commitment to ensure that the sublessee utilizes similar or less hazardous chemicals than those currently being used in maintenance activities in Hangars 1027 and 1050.

2.0 DESCRIPTION OF THE PROPOSED ACTION AND ALTERNATIVES

2.1 DESCRIPTION OF THE PROPOSED ACTION

The Proposed Action would permit the joint use of Carswell AFB, specifically Hangers 1027 and 1050, by a sublessee to the city of Fort Worth (Figure 2-1). The sublessee would establish a satellite commercial aircraft maintenance center at these facilities and would conduct maintenance operations on Boeing 727 and McDonnell-Douglas MD-80 and DC-9 aircraft. The commercial maintenance activities would be similar to the type of maintenance conducted by the Air Force on B-52s and KC-135s at Carswell AFB.

The Air Force is currently using Hangars 1027 and 1050 for aircraft maintenance on B-52H and KC-135A aircraft. It is possible for the Air Force to consolidate their work in Hangar 1050 to allow civilian use of Docks 3 and 6 (Figure 2-2) and to allow use of Hangar 1027 on a scheduled basis. This would allow commercial use of 3 hangar bays totaling 108,300 square feet of floor space. The proposed joint use would be established as early as the first quarter of 1992 and would continue until Carswell AFB closes (September 1993). The city of Fort Worth and the sublessee would then be permitted to continue operations on a short term basis until a decision regarding ultimate disposal has been reached.

2.1.1 Aircraft Maintenance Activities

The types of activities proposed in this commercial maintenance operation includes washing the aircraft and accomplishing "C" and "D" commercial maintenance checks.

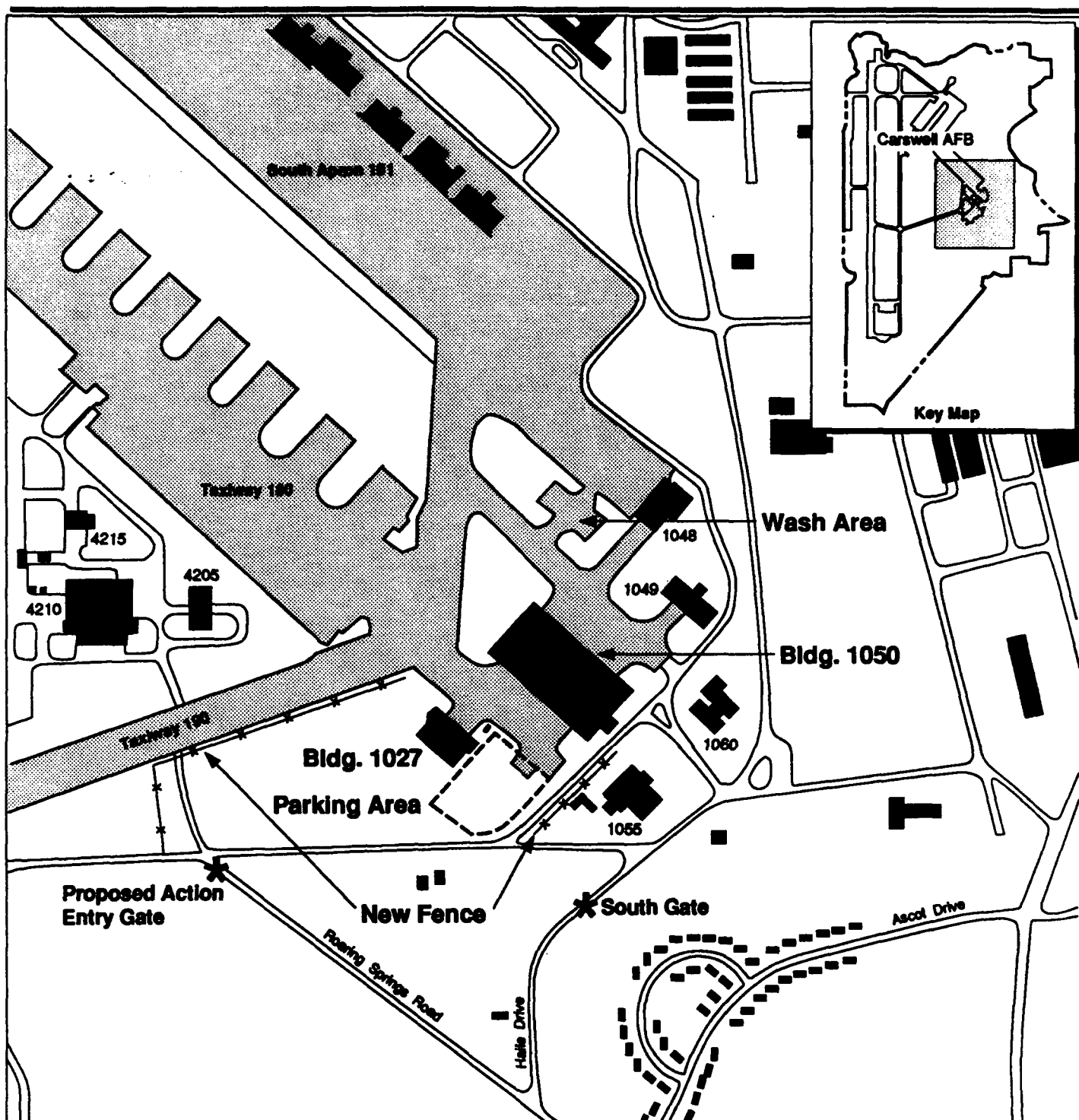
A "C" check involves a thorough inspection of the entire aircraft. All major aircraft systems are "operationally cycled" while on the ground. Some components that are time-limited are replaced. All items requiring lubrication are serviced and most of the aircraft filters are changed. Under the Proposed Action, any components that require major repair would be sent to an outside facility. No engine overhaul maintenance would be performed under the Proposed Action; however, engine adjustments and replacement of filters and small parts would be accomplished. Additionally, a general cleaning of the aircraft's interior would be accomplished, including servicing of the lavatories and supporting systems. All sanitary wastes would be discharged to the base's sanitary system. The entire "C" check would require about 8 days from arrival to final departure.

A "D" check is a major heavy aircraft inspection. In addition to all the "C" check inspection items, the main structural members are examined using non-destructive inspection (NDI) techniques, such as X-rays, and repaired as necessary. All FAA Air-worthiness Directives (ADs) and Service Bulletins are completed at this time. Approximately 21 to 35 days are required to complete a "D" check.

In most circumstances, the sublessee would utilize its own ground support equipment unless prior approval is granted by the Air Force for use of their equipment.

2.1.2 Hazardous/Non-Hazardous Material Usage and Waste Management

All material storage and usage would comply with applicable state, local, and federal laws, policies and procedures outlined in the sublessee's safety or environmental management directives, the Carswell AFB Hazardous Waste Management Plan, and applicable good practice industry standards. All hazardous materials operations would comply with local, state and federal laws. The sublessee would maintain an



EXPLANATION

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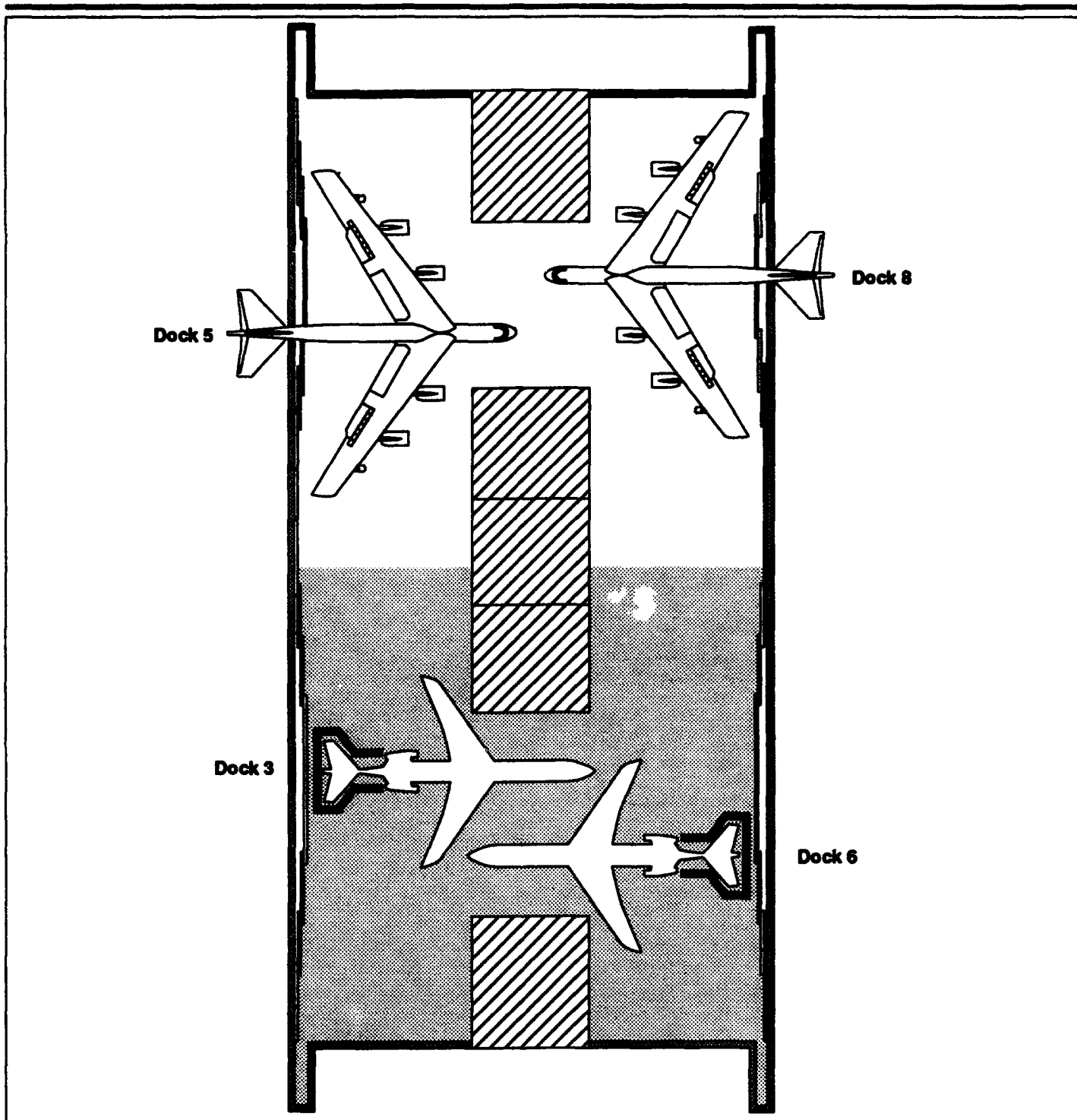
Site Location

Carswell AFB, Texas

Figure 2-1






Carswell/002



EXPLANATION

Joint Use of Hangar 1050

-  Commercial Maintenance Area
-  USAF Administrative and Shop Areas
-  Aircraft Stand

Carswell AFB, Texas

Figure 2-2



Carswell 005

on-site list of all hazardous Joint Use of Hangar 1050 materials used with accompanying Material Safety Data Sheets (MSDS). Annual training shall be given to all employees by the sublessee on hazardous materials. A sublessee or city of Fort Worth representative would be available on a daily basis to answer any Air Force questions.

Any portable cleaning units provided by a vendor service would comply with all applicable state and federal standards, and Air Force directives. Inside the hangars there would be individual storage cabinets for flammables, corrosives, and combustibles. The cabinets protection standards and be subject to inspection by Air Force, local, state, and federal agency personnel. The city of Fort Worth or the sublessee would be responsible for completing and obtaining approval from Carswell AFB for an independent hazardous waste, fuel and chemical spill plan.

The solid and hazardous wastes generated by this proposed operation would be disposed of through recycling, treatment, and incineration methods utilizing only Environmental Protection Agency (EPA), state of Texas, and city of Fort Worth approved vendors. The hazardous waste would be stored for a period not to exceed the allowable 90-day exception for generators. A storage area with containment allowing for 150% of maximum storage capacity would be utilized, and segregation of incompatible hazard classes would be strictly enforced. On a daily basis all hazardous waste accumulation or storage sites would be inspected by qualified city of Fort Worth, or sublessee personnel. Any proposed changes to this procedure shall be approved by the appropriate Air Force personnel, federal, state, and local agencies prior to implementation.

The proposed operation is estimated to produce about one (1) drum of liquid and two (2) drums of solid hazardous wastes per month. The proposed operation is expected to generate approximately 2,000 lbs. of solid waste. (This data was projected from similar sublessee operations currently operating in the Dallas-Fort Worth area--See Table 2.1.)

Table 2-1. Solid and Hazardous Wastes Proposed Action

Waste Solvent	15 gals/month
Waste Chlorinated Solvent with Residue	30 lbs/month
Waste Oil/Hydraulic Fluid	10 gals/month
Waste Fuel	25 gals/month
Dirty Rags	500 lbs/month
Empty Hazardous Material Containers	100 lbs/month
Empty Aerosol Cans	50 lbs/month
Absorbent Soaked with Fuel & Oil	150 lbs/month
Miscellaneous Refuse	1,700 lbs/month

Source: City of Fort Worth, 1991

Under the Proposed Action, only minor aircraft paint stripping using chemical methods would be required. This stripping would be predominately in support of NDI activities. Most preparation for the

small amount of painting that is associated with the Proposed Action would be by use of abrasive means (i.e., sanding). Chemical stripping activity would be undertaken only as required. The chemicals utilized are the same as currently used by the Air Force on KC-135s and B-52s. About 1 gallon per month of methylene chloride will be hand applied for stripping of small areas.

Minor touch-up aircraft painting of areas where NDI has been performed or corrosion control is needed would be accomplished in Hangars 1027 and 1050 or outside as weather permits and be will accomplished either by spray can or small electro-static spray system. Large parts needing painting such as control surfaces would be removed from the aircraft and transported off Carswell AFB to other sublessee Dallas-Fort Worth facilities. It is estimated that about 5 gallons of poly-urethane paint and primer would be used per month by the sublessee on Carswell AFB.

There would only be minor solvent usage associated with degreasing operations of the aircraft under the Proposed Action. About 30 gallons per month of "chlorothene" (a commercial product consisting approximately 95% of 1,1,1-Trichloroethane) and 5 gallons of methyl ethyl ketone (MEK) and lacquer thinner would be used.

During the "C" check-out operations that are proposed by the city of Fort Worth's sublessee, the FAA requires replacement of aircraft fluids. The monthly volume of products removed under the Proposed Action would be 90 gallons of engine oil, 30 gallons of hydraulic fluid, and 2 gallons of grease and lubricants. These products would be collected, treated and stored in approved containers and locations for salvage and reuse. Such wastes are not considered hazardous by the state of Texas; however, the sublessee would follow as a minimum the Carswell AFB Spill and Waste Recovery Plan to ensure sound environmental practices are used during maintenance procedures.

Prior to the aircraft being placed in a hangar, all fuel would be drained from the tanks and placed in Air Force, federal, and state approved fuel bowsters or trucks. About 7,000 gallons per month would be collected and recycled for future use. After the maintenance operations are completed, about 15,000 gallons of fuel would be added to permit about 2 hours of check out operations and then a 2 hour functional check flight. Ground-run operations would be at a location acceptable to the Air Force and coordinated as required. The aircraft would return to Carswell AFB after the check flight for refueling (about 7,000 gallons) prior to release to the owner's crew.

Aircraft washing under the Proposed Action would be conducted in Hangar 1027 or at an outside wash area. About 10 aircraft per month would be washed by the sublessee using about 240,000 gallons of water and 750 gallons of alkaline bio-degradable soap. The sublessee would not pretreat soiled areas with solvents.

Generation of solid waste from the proposed operations would be 500 pounds per month for rags and 150 pounds per month of absorbent soaked with fuel and oil. Waste accumulated on rags would be stored in approved containers and disposed of or recycled in accordance with state of Texas regulations.

Operations during the winter months may require the use of ethylene glycol for de-icing purposes. The sublessee would conduct these operations using their equipment. The sublessee currently conducts de-icing at other locations within the Dallas-Fort Worth area. Both the sublessee and the Air Force would conduct de-icing only as necessary, preferring to use warm hangar space and aircraft systems to avoid de-icing requirements. As the requirement for de-icing is on an as-needed basis, no estimate of ethylene glycol quantities used is available.

2.1.3 Aircraft Operations

Commercial maintenance under the Proposed Action would be performed primarily on Boeing 727 aircraft (95 percent of the aircraft). In addition, McDonnell-Douglas MD-80 and DC-9 aircraft would occasionally be serviced by the sublessee. Approximately 6 to 10 aircraft would be washed and inspected per month.

Arrival, departures and test flights would result in about 30 flight operations (an operation is one take-off or landing) per month, or up to 360 annual flight operations. These flights would occur between 6 am to 10 pm, unless otherwise approved by the Wing Commander or designee for next day aircraft deliveries. Approximately 75 percent of the flights would depart to the south based on current operating procedures.

All flight activities would be approved and controlled by the Tower Ground Control and Base Operations. The Tower would be notified at least an hour and usually 24-hours in advance of expected arrivals and departures. Flight approaches and departures would be controlled as per the current military and civil flight operations.

Limited engine run-up and testing may be required to check gauges after oil/fuel has been refilled. The operations would require up to 15 engine run-ups per month within the apron area. These run-ups would last about 1.5 hours and would not occur between the normally designated quiet hours (10 pm to 6 am), unless otherwise approved by the Wing Commander or designee for next day flights.

2.1.4 Support Facility Requirements

In addition to the hangar space, the commercial maintenance operations would require the use of the aircraft parking ramp and taxiway access, open storage space, vehicle parking space and administrative area.

Approximately 34,000 square feet of ramp area would be needed to perform inspections, run-ups, and for aircraft parking. The location of the apron parking area would be determined on an "as-needed-basis" by the Air Force based on space availability. Ramp and taxiway access would be approved and controlled by the Tower Ground Control and Base Operations.

Open space would be required to store the aircraft tail stands. This area would be located adjacent to the Hangar area as approved by Base Operations and 7th Wing logistics.

Employee vehicle parking requirements would be about 75 to 90 parking spaces to allow enough spaces for the transition between work shifts. The vehicle parking area would be located southeast of Hangar 1027 (Figure 2-2).

A total of 2,000 square feet of administrative space would be required to support the satellite maintenance center. The administrative area could be located anywhere on Carswell AFB; however, a location within two city blocks of the hangars is desired.

2.1.5 Personnel Requirements

A total of 200 employees would be associated with the commercial maintenance operations. The 7-day per week, 24-hour operation would include about 100 employees working the day shift (0700-1500), about 65 working swing shift (1500-2300) and 35 employees working the night shift (2300-0700). It is anticipated that the majority of the work force would reside in the local area as the prospective sublessee has a large number of employees currently in this area.

2.1.6 Construction Requirements

The only construction anticipated for the Proposed Action is approximately 2,000 feet of new fence line along the northern and southern portion of the maintenance area (See Figure 2-1). The fence line would isolate the commercial maintenance operations from the rest of the installation. The fence line would be completed prior to the commercial maintenance operations at no cost to the Air Force.

The sublessee will also construct a 10 by 40 foot tool crib area for storage of small tools inside Hangar 1050 at a location approved by the Air Force.

2.1.7 Traffic Generation

The Proposed Action would generate about 400 passenger car trips per day and about 9 truck trips (i.e., supply and fuel trucks) per day. These vehicles would access the site via Roaring Springs Road by an existing construction gate north of the existing South Gate entry point (see Figure 2-1).

2.2 NO ACTION ALTERNATIVE

Under the No-Action alternative, the Air Force would continue present KC-135 and B-52 aircraft maintenance operations in Hangars 1027 and 1050 at Carswell AFB, Texas until closure. The relatively small number of commercial flight operations and maintenance functions in Hangars 1027 and 1050 as outlined above would not take place.

2.3 ALTERNATIVES CONSIDERED BUT ELIMINATED FROM FURTHER CONSIDERATION

The potential use of other existing maintenance facilities was considered but eliminated from further consideration because Hangars 1027 and 1050 are the only facilities at Carswell AFB which can accommodate the commercial aircraft maintenance operations without major facility modification.

In addition, new construction of aircraft maintenance facilities in open areas on base was eliminated from further consideration due to the operational schedule requirements of the sublessee.

2.4 CUMULATIVE ACTIONS

The only outside action that would affect or be affected by the Proposed Action is the closure of Carswell AFB. The base is scheduled to close on 30 September 1993. Drawdown activities will be initiated in mid-1992 and most of the 6,400 military and civilian personnel will leave the base by spring of 1993. A limited number of personnel will be left on base to manage the closure and disposal of the base property. Aircraft operations will be reduced starting in the fall of 1992 as the fleet is removed from Carswell AFB. The 23 stationed B-52s will be removed by the end of 1992 and the 17 stationed KC-135s

will be removed by the spring of 1993. However, the Air Force Reserve's 301st Tactical Fighter Wing with a complement of 28 F-16 aircraft will remain operational through closure and remain in a cantonment area yet to be established.

2.5 COMPARISON OF THE PROPOSED ACTION AND THE NO-ACTION ALTERNATIVE

A summary comparison of the environmental impacts on each resource due to the Proposed Action and No-Action alternative is provided below. Potential effects to the environment are discussed in detail in Chapter 4.0 Environmental Consequences.

Hazardous/Non-Hazardous Materials and Wastes - The number of personnel and the washing of the additional aircraft will not significantly effect the demands on wastewater treatment facilities. Oil/water separators are in place to separate petroleum products from the wastewater prior to discharge to the sewer and stormwater drainage system. The use and storage of hazardous materials will be in accordance with local, state and federal regulations and will be monitored by Air Force personnel. There will be a small increase in the generation of hazardous waste, but existing disposal plans are adequate to meet the increase. These increases are not expected to have a significant impact. Hazardous wastes will not be stored longer than 90 days in approved containers. Hazardous waste spills would be cleaned up, placed in containers, and disposed of in accordance to applicable regulations to prevent soil and water contamination. The city of Fort Worth and its sublessee will be required to follow the Carswell AFB Spill and Hazardous Waste Management Plan. Since the activity would not occur in areas under the Installation Restoration Program (IRP), no effect on that program is anticipated. The No-Action Alternative would result in no changes to current usage and management practices.

Air Quality - Implementation of the Proposed Action would result in minimal increases in hydrocarbon emissions, thus causing minimal impacts to the regional air quality. These emission increases, however, would be off set by the decreased aviation operations associated with the base drawdown and closure activities. The No-Action alternative would not adversely impact regional air quality.

Land Use - Under the Proposed Action, temporary minor land use constraints may occur during the construction of the new fence-line, however no significant land use conflicts would occur during operations. No change to land uses would occur under the No-Action alternative.

Noise - The Proposed Action would not significantly increase the current noise levels due to the quieter commercial aircraft and the limited flight operations. The No-Action alternative would not increase the current noise levels. Overall noise levels are expected to decrease as the Air Force ceases operations due to base closure.

Socioeconomics - Carswell AFB is located in a highly developed urban area (the Dallas/Fort Worth Metroplex). The Proposed Action is expected to employ approximately 200 personnel. The majority of these employees are expected to already reside in the surrounding area. Positive impacts resulting from employees' salaries are expected to be minimal. The No-Action Alternative would not change the socioeconomic conditions in the area.

Infrastructure - Small increases in demand on utilities due to the Proposed Action will not significantly impact the existing service infrastructure. The transportation infrastructure will also be only minimally impacted due to Proposed Action vehicular traffic. Existing airfield pavements were designed to support heavy aircraft and are structurally sufficient to support the Proposed Action's aircraft. The Proposed

Action would not affect asbestos containing materials because no facility modifications are anticipated. No change to infrastructure would occur under the No-Action Alternative.

Water Resources - The Proposed Action would not cause impacts to the surface drainage patterns or groundwater characteristics. Increased water demands would be minor and would not cause impacts to the water supply sources. No changes to water resources would occur under the No-Action alternative.

Biological Resources - Implementation of the Proposed Action would not result in significant impacts to biological resources because the action would take place in existing facilities, on paved areas or on previously disturbed and cleared open areas. No federally or state listed threatened or endangered species are known to occur on the base. No changes to biological resources would occur under the No-Action alternative.

Cultural Resources - Carswell AFB contains no known archeological resources; however, some potential to encounter subsurface resources during the construction of the fenceline does exist. If any cultural resources are encountered during construction, work within that area would stop and the Base Historic Preservation Officer or a qualified archeologist would be consulted before construction work in that area would be allowed to proceed. The Proposed Action would not impact historic resources. No disturbance to cultural resources would occur from the No-Action alternative.

3.0 AFFECTED ENVIRONMENT

This chapter profiles the environment at Carswell AFB. The environmental components addressed comprise the relevant natural or human environments that are likely to be affected by the Proposed Action or No-Action alternative.

Based on the installation and operational characteristics of the Proposed Action (see Chapter 2.1), it was determined that the following resources could potentially be affected: hazardous materials/wastes, air quality, land use, noise, socioeconomics, infrastructure, water resources, biological resources, and cultural resources.

3.1 LOCATION, HISTORY, AND CURRENT MISSION

3.1.1 Location

Carswell AFB is located in north central Texas in Tarrant County, six miles west of downtown Fort Worth (Figure 3-1). The base is bordered by Lake Worth to the north, the West Fork of the Trinity River and the community of Westworth Village to the east and southeast, the community of White Settlement to the south and southwest, and Air Force Plant #4 to the west.

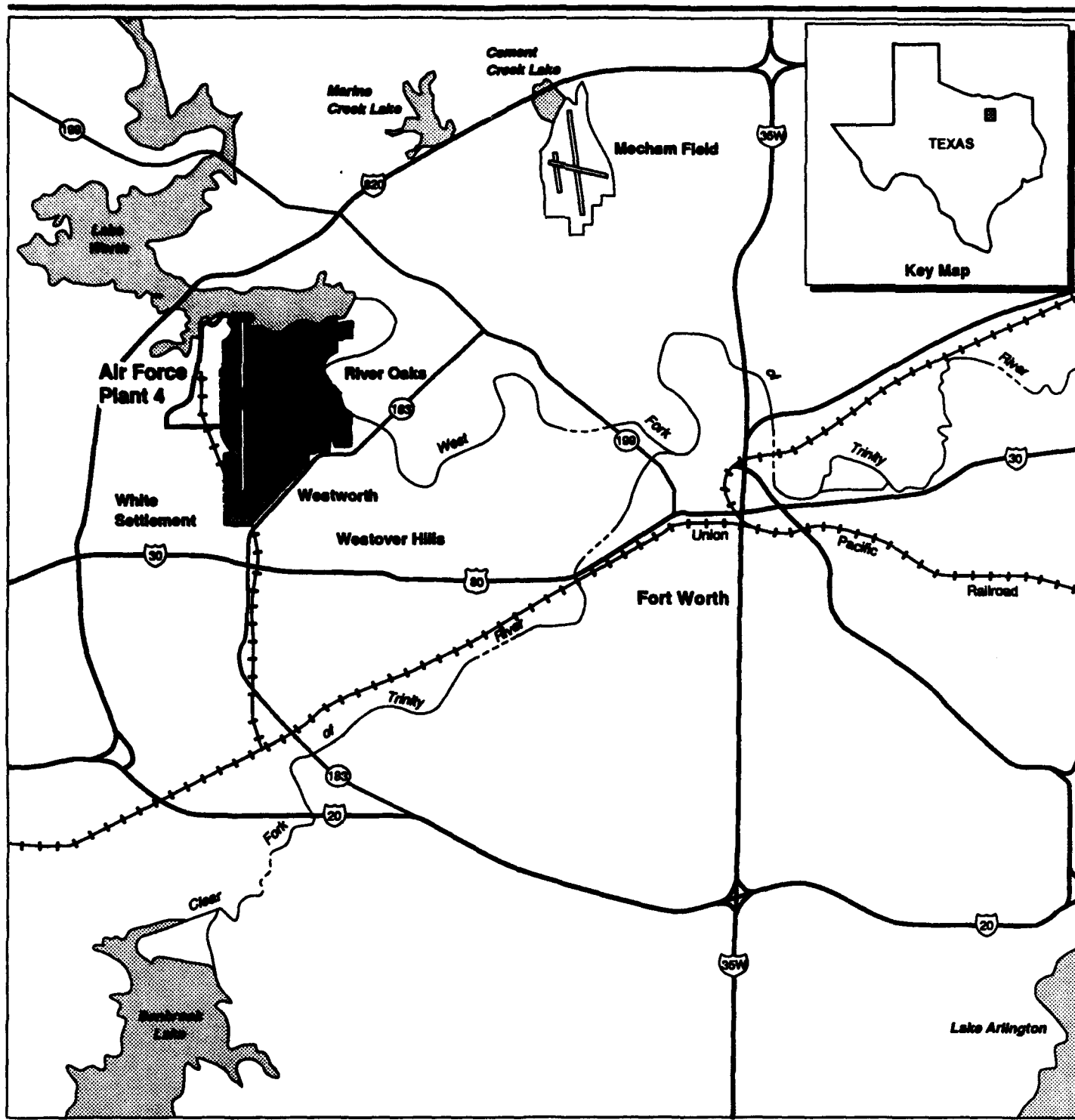
3.1.2 History

The history of Carswell AFB dates back to Spring of 1941 when, at the request of President Roosevelt, the local Chamber of Commerce and other civic groups of Fort Worth attempted to attract new manufacturing facilities in the midst of a defense expansion. The Chamber contacted various aircraft companies, telling them of sites in the area. The Consolidated Vultee Aircraft Corporation expressed an interest in the site and six months later the War Department authorized the company to build a plant, now known as Air Force Plant #4, which borders Carswell AFB on the west. In 1941, negotiations began between the Chamber and the War Department for an Army Air Force training base. Pearl Harbor forced a speedy decision and construction was started on 28 June 1942.

Previously known as Lake Worth Industrial Airport, Tarrant Field Airdrome, Fort Worth Army Airfield, Fort Worth Airfield, and Griffiss AFB, Carswell AFB received that official designation on 30 January 1948, in honor of Major Horace S. Carswell, Jr., a native of Fort Worth. Major Carswell died on 26 October 1944 in the crash of his B-24, Liberator, in China after keeping his severely damaged aircraft aloft long enough to allow 8 crew members to parachute to safety. Over the years the base has been the home of B-24, B-29, B-36, B-58 and F-4 aircraft.

3.1.3 Current Mission

Carswell AFB is the home of the 7th Wing which flies B-52 and KC-135 aircraft and the 301st Tactical Fighter Wing (Air Force Reserve) which flies F-16s. The 7th Wing's mission is to maintain assigned units in a combat ready state to respond to all war orders. The Wing trains bombardment, air refueling crews, and support units to perform global bombardment operations and performs special missions as directed. The 301st Tactical Fighter Wing trains reservists to deploy and execute directed tactical fighter missions against enemy forces and logistics with conventional weapons within the limits of the F-16 equipped units capabilities.



EXPLANATION

- Interstate Highway
- U. S. Highway
- State Highway
- Base Boundary



Carswell/001

Regional Map

Carswell AFB, Texas

Figure 3-1

Carswell AFB is also the home of the Robert L. Thompson Strategic Hospital, 436th Strategic Training Squadron, and 2048th Communications Squadron. Their missions are to support the 7th Wing and its host duties to the 301st Tactical Fighter Wing.

3.2 CURRENT AIRCRAFT OPERATIONS

3.2.1 Aircraft Operations

Flight operations based on available data are shown in Tables 3-1, 3-2, and 3-3. Table 3-1 displays the generation of flights per day from Carswell AFB by both assigned or transient aircraft. Table 3-2 provides data on the total number of operations that occurred at Carswell AFB during FY 1991 from Air Traffic Control logs. An operation in the table is defined as an event that requires a pilot to request clearance from the control tower to execute an approach to or departure from a runway traffic pattern under the tower's control. This clearance could be for a landing, take-off, touch and go (explained below), or low overflight purposes. The table provides information on how busy the airfield is versus how much aircraft activity is generated a day from aircraft based at the field which is shown in Tables 3-2 and 3-3. Table 3-3 gives data for monthly landings and take offs (LTOs) and touch and gos (TGOs) for aircraft assigned to Carswell AFB alone. The TGO data is kept specifically for the B-52s and KC-135s which fly locally and practice landing and take off procedures by touching down briefly and then re-applying throttle to takeoff without coming to a full stop. The procedure is called a touch and go. Therefore, the airfield sees a greater number of arrivals and departures than a civilian field which would see predominately approaches and landings with the aircraft coming to a full stop and taxiing to a parking position. Military fighter series aircraft accomplish TGOs as well, but that data is not kept at Carswell AFB.

Table 3-1. Carswell AFB Flight Generation

Aircraft	Daily Takeoffs	Percent
B-52H	16	11
KC-135A	21	14
T-37B	36	24
F-16, F-4	27	19
Transient	46	31

Source: USAF, 1986.

Table 3-2. Carswell AFB FY 1991 Operations

	24 Hour Clock Time Periods			
	0000-0600	0600-1200	1200-1800	1800-2400
Military	1,819	10,473	21,600	7,962
General Aviation	312	4,234	5,648	1,865
Air Carrier	4	55	293	43

Source: USAF, 1991a.

Table 3-3. Monthly Aircraft Operations

Aircraft	LTO Cycles	GTO Cycles
B-52H	80	240
KC-135A	116	347
T-37B	36	-
F-16,F-4	27	-

Source: USAF, 1990b.

Finally, Runway 17 (aircraft landing and taking off to the south) is used for approximately 75% of the operations.

3.2.2 Aircraft Maintenance

The present use of Hangars 1027 and 1050 is for maintenance and corrosion control activities on KC-135 and B-52 aircraft. This involves control surface repair, pneudraulics and other flight system repair and adjustment, avionics repair and corrosion control. The maintenance revolves around scheduled inspections, flightline maintenance, and in-shop component and engine repair.

3.3 HAZARDOUS/NON-HAZARDOUS MATERIAL USAGE AND WASTE MANAGEMENT

3.3.1 Hazardous/Non-Hazardous Materials

Carswell AFB handles thousands of gallons and hundreds of pounds of hazardous materials per year to support the aircraft and vehicle maintenance and the general operation of the base. These materials range in scope from common building paints to industrial solvents, strippers, and pesticides. The base has a Hazardous Material Management Plan, dated November 1990 to address safe handling and transport of these materials in addition to the use instructions associated with each material. Hazardous materials that may be found in use in Hangars 1027 and 1050 are "Citrikleen", SE-377c, "Safety Kleen", PD-680, epoxy strippers, carbon remover, paints and thinners, JP-4, Freon 113, and pesticides. Quantities in use vary with the maintenance activity underway at the time. Table 3-4 identifies the types and quantities of materials used in the current maintenance activities.

3.3.2 Hazardous Wastes

As part of its various current activities, Carswell AFB generates substances that have been designated as hazardous wastes and is required to comply with the RCRA regulations established by the EPA and administered by the Texas Water Commission under Texas Administrative Code 355. These regulations require that the hazardous wastes be handled, stored, transported, disposed of or recycled according to defined procedures. Carswell AFB has incorporated these procedures in their Hazardous Waste Management Plan dated April 1991, which is applicable to all USAF activities.

The estimated annual quantity of these hazardous wastes generated and requiring disposal is about 14,700 gal/year, plus an additional 19,000 gal/year used petroleum products and 2,300 gal/year of antifreeze. Used petroleum products and antifreeze are not currently regulated by Texas as hazardous wastes. The Air Force recycles these collected petroleum products. Table 3-4 provides estimated quantities of

Table 3-4. Current Hazardous/Non-Hazardous Material Usage (estimated)

Methylene chloride	2 quarts/mo
Poly-urethane paint	5 gal/mo
Engine oil	50 gal/mo
Hydraulic Fluid	110 gal/mo
Grease and Lubricants	35 gals/mo
PD-680	5,400 gal/mo
Soap (with and without petroleum solvents)	2,700 gal/mo

hazardous wastes currently generated requiring disposal. Table 3-5 lists the hazardous waste collection points in the vicinity of Hangars 1027 and 1050 which is the focal point of the Proposed Action. The hazardous waste collection at designated accumulation points is primarily in labeled 55-gal drums.

Table 3-5. Currently Generated Hazardous Wastes (estimated)

Paint Waste	1,450 gal/year
Solvents	11,500 gal/year
Process Chemicals	400 gal/year
Process Oils	1,000 gal/year
Battery Acids	350 gal/year

Source: USAF, 1991b.

Table 3-6. Collection Points for Hazardous Wastes (Hangers 1027 and 1050 Area)

Facility	Activity	Type of Wastes
1191	Vehicle Maintenance	Paint Waste, "Safety Kleen"
1055	Avionics Maintenance	Freon
1050	Pneudraulics Shop	PD-680, Citrikleen
1059	Fabrication Shop	MEK, Paint Wastes, Cleaning Compounds
1048	Fuel Cell Repair	MEK, PD-680
1055	Weapons Release	PD-680

Source: USAF, 1991b.

Generators of hazardous waste at Carswell AFB are required to provide a complete breakdown of the contents of the waste submitted for recycling or disposal. If the waste composition is unknown, analysis is conducted by the base Bioenvironmental Engineer to establish the composition.

Most hazardous wastes collected at accumulation points are turned in to the Defense Logistic Agency's Defense Reutilization and Marketing Office (DRMO) Facility, Bldg 1347, or "Safety Kleen" vendor. DRMO has the responsibility to dispose of the hazardous wastes according to regulatory guidelines. The DRMO at Carswell AFB operates under the base's Permit No. HW-50289, issued by the Texas Water Commission for storage of the hazardous waste. Some hazardous waste is disposed of by Carswell AFB directly through contract with approved disposal firms such as "Safety Kleen". Transferring the hazardous waste responsibility to off-site disposal contractors, either by the DRMO or Carswell AFB, includes the preparation of manifests used to track proper disposal of waste products.

In accordance with the Hazardous Waste Management Plan, each organization generating or storing hazardous waste is required to ensure that all personnel who manage hazardous materials or handle hazardous wastes receive annual training with regard to safe procedures for carrying out their responsibilities.

Due to the nature of aircraft maintenance activities, many of the materials (hazardous and non-hazardous) applied in these activities are used in the process (UIP) and drummed or collected for treatment at the generation point. Many of the resulting UIP constituents which are discharged to the sanitary system for treatment must pass through Air Force operated oil/water separators before passing into the city of Fort Worth's municipal wastewater treatment facilities. The oil/water separators trap the heavier constituents and are inspected monthly and cleaned periodically by state of Texas licensed contractors. The bulk of the constituents that would pass through the oil/water separators are lighter solvents and soaps. Wastes passed through the sanitary system to the city of Fort Worth sanitary treatment facilities result primarily from aircraft washdown. These wastes are estimated to be 3,600 gallons of industrial soaps, 7,200 gallons of light solvents, and 11,000 of miscellaneous process chemicals per year. Aircraft washdown activities account for 2,700 gallons of soap and 5,400 gallons of light solvent usage per year alone. These aircraft washdown chemical constituents which do not volatilize before reaching the sanitary sewage treatment are diluted by the 4,400,000 gallons of water used per year in the process.

3.3.3 Solid Wastes

Non-hazardous domestic, industrial, and construction refuse (solid waste) generation is estimated at 7,000 tons/year. A local disposal company contracted for by the base collects the general refuse for disposal in an off-base sanitary landfill. Construction contractors are responsible for removing, from the base, waste generated by their activities.

3.3.4 Installation Restoration Program

Past activities at Carswell AFB have had the potential to contribute to soil and groundwater contamination at the base. Such activities may have included burial of drums or containers and other unspecified materials at several sites; disposal of waste oil, solvent, paint residue, and similar substances into unlined pits; discharge of waste aviation fuel, oil, lubricant, and miscellaneous combustible materials during fire training exercises; and leakage from storage tanks containing fuels; spills of aviation fuel, oil, solvent, and similar substances onto unprotected surfaces.

Under the mandate of CERCLA and SARA, the Air Force is actively pursuing under its IRP to address and, as necessary, remediate environmental concerns created by these past practices. These federal statutes define the applicability of cleanup requirements to federal facilities (CERCLA Section 120) and establish the Defense Environmental Restoration Program (DERP) (of which the USAF IRP is a part).

One specific objective being the identification, investigation, research and development, and cleanup of contamination from hazardous substances, pollutants, and contaminants (SARA Section 211).

At Carswell AFB, 20 IRP sites have been identified. See Figure 3-2 for locations. The Air Force is working with the Texas Water Commission to address these sites and determine if remedial activities are required. Carswell AFB is not on the EPA's National Priorities List (NPL) as of this date.

Landfill No. 2 is the only IRP site due to its proximity to Hangars 1027 and 1050 that could affect activities associated with the Proposed Action. The landfill was created as a borrow pit for airfield construction activities in the 1940s and served (as records indicate) as a landfill from approximately 1952 to 1956. It has been reported that miscellaneous wastes were buried in shallow trenches, but it has also been reported that the site was used only for construction debris. The site has never been considered a significant concern from the onset of the IRP in 1984 at Carswell AFB and while no test pitting of the landfill to determine its composition has been conducted, construction of Hangar 1050 in the late 1950s did disturb the landfill, turning up only rubble materials. Due to the lack of evidence that the site is a concern, EPA did not include it during a recent RCRA Facility Inspection (RFI) of sites given further consideration. Therefore, base personnel consider the site to require no further action and will make that case known to the Texas Water Commission for their concurrence.

3.4 AIR QUALITY

Carswell AFB is located in the Metro Dallas/Fort Worth Federal Air Quality Control Region, Area 215. The Texas Air Control Board (TACB) Region 8 has jurisdiction in the area to comply with the National Ambient Air Quality Standards (NAAQS) and other regulations established by the Clean Air Act, as amended in 1990.

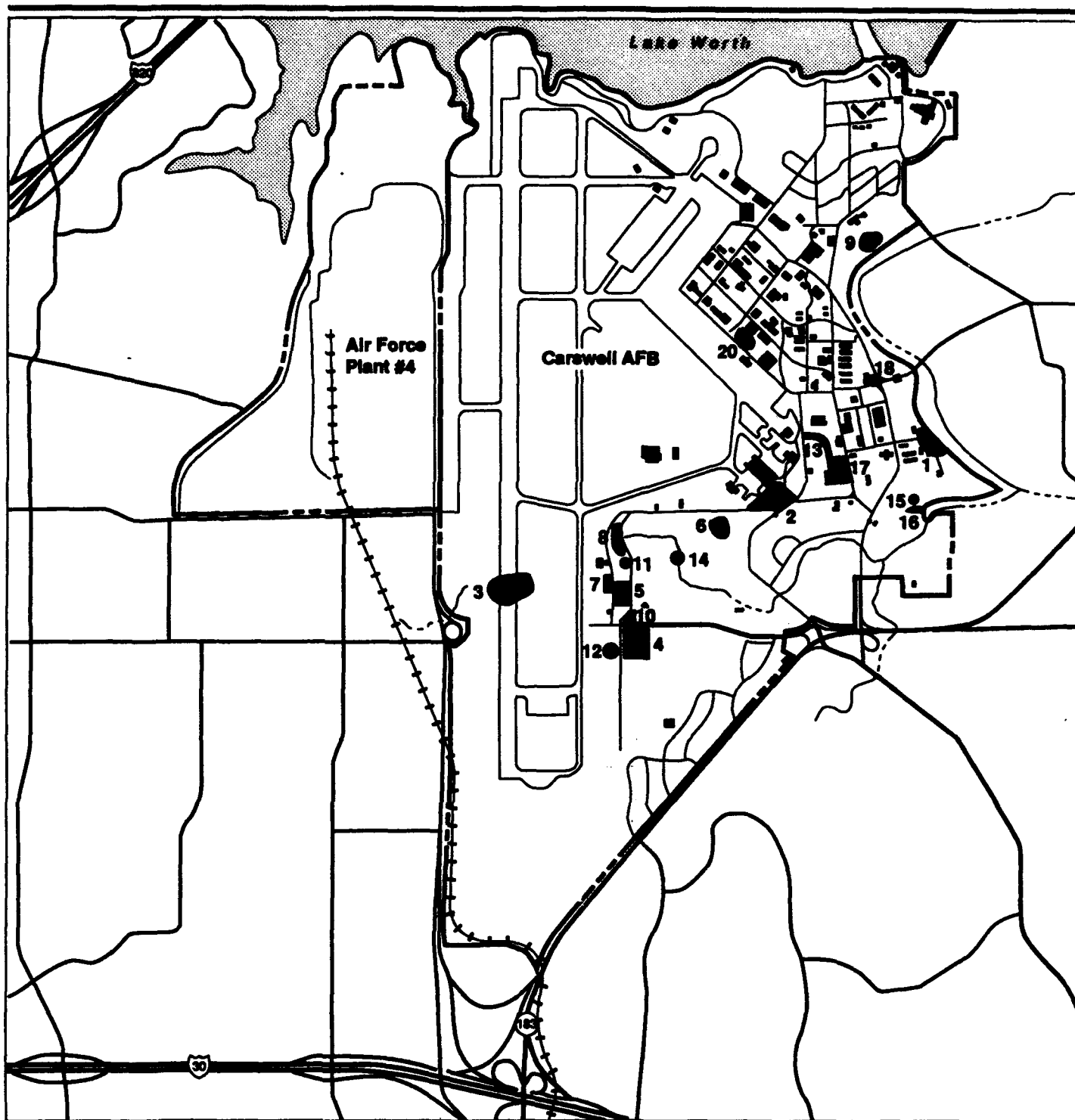
3.4.1 Regional Air Quality

Air quality in the region is affected by the weather patterns. Wind speed and direction influence the dispersion of air pollutants. Average wind speeds within the region are approximately 5 to 10 knots and wind direction is typically out of the south throughout the year. Ambient air quality is not monitored within the boundary of Carswell. The nearest air quality monitoring station is located at Meachum Field, about 5 miles northeast in the city of Fort Worth.

Air monitoring in the region by TACB indicates that Tarrant County is in attainment for all of the NAAQS criteria pollutant levels, except for ozone. According to federal classification, Tarrant County is designated as being in the "moderate" ozone non-attainment category. Areas with moderate ozone non-attainment status (0.138 to 0.160 ppm) must develop attainment plans that include a number of measures to reduce overall population exposure to the national standards for ozone (0.12 ppm) by 1996. Tarrant and Dallas counties and the State of Texas have developed and submitted a Corrective State Implementation Plan (SIP) Revision to the EPA to reach and maintain attainment of all federal air quality standards, including ozone.

3.4.2 Air Pollutant Emission Sources

The major sources of emissions associated with Carswell AFB include aircraft flight and maintenance operations, motor vehicle operations, heating and power production, aircraft engine testing, and stationary internal combustion engines. The total emissions for Carswell AFB in CY 1990 is shown in Table 3-7.



EXPLANATION

- | | | |
|-------------------|---|---|
| 1. Landfill No. 1 | 8. Landfill No. 8 | 15. Entomology Dry Well |
| 2. Landfill No. 2 | 9. Landfill No. 9 | 16. Unnamed Stream |
| 3. Landfill No. 3 | 10. Waste Burial Area | 17. POL Tank Farm |
| 4. Landfill No. 4 | 11. Fire Department Training Area No. 1 | 18. Site BSS |
| 5. Landfill No. 5 | 12. Fire Department Training Area No. 2 | 19. Off-base Weapons Storage Area
(Site Not Shown) |
| 6. Landfill No. 6 | 13. Flightline Drainage Ditch | 20. Building 1414-Waste Oil Dump |
| 7. Landfill No. 7 | 14. Pesticide Rinse Area | |

--- Base Boundary

0 625 1250 2500 Feet



Carswell 004

Installation Restoration Program Sites

Carswell AFB, Texas

Figure 3-2

Table 3-7. Carswell AFB Air Emissions Inventory, 1990 (tons/year)

Same Category	PA	NO _x	CO	THC	SO _x
Incinerators	0.34	0.15	0.49	0.15	0.12
Firefighting*	7.22	0.23	31.60	18.05	0.02
Heating and Power Production	1.01	12.10	2.01	0.12	0.06
Surface Coating	-	-	-	22.04	-
Aerospace Ground Equipment	5.84	82.04	109.06	8.84	2.82
Fuel Evaporation Losses	-	-	-	123.19	-
Aircraft Ground Operations	.51	4.04	15.70	9.68	0.79
Aircraft Flying Operations	28.20	211.94	1471.49	1420.05	40.29
Solvent Tank Degreasing	-	-	-	0.28	-
Generator Testing	0.07	0.93	1.53	0.12	0.06
Total	43.2	311.4	1631.9	1602.5	44.2

* Firefighting practices are no longer conducted at Carswell AFB.

Source: USAF, 1991c.

Although Carswell AFB does not have any air permits, the base is currently in compliance with state regulation regarding air quality permitting through grandfathered operations and the TACB Standard Exemption List.

Carswell AFB is operating under a compliance agreement with EPA for volatile organic compound (VOC) emissions from aircraft refueling operations. That agreement requires the Air Force to submit monthly emission inventories to the EPA.

Carswell AFB is considered a major source of air pollutant emissions (total pollutants exceed 100 tons per year) by the Texas Air Control Board. However, the base is one of numerous major sources of emissions in the Dallas/Fort Worth Metroplex (e.g., Dallas/Fort Worth International Airport, major industrial and oil/gas industries).

3.5 LAND USE

3.5.1 On-Base Land Use

The contiguous base property consists of 2,756 acres and includes the following general land uses:

Airfield	674
Aviation Support	326
Industrial	156
Commercial (Administrative/community)	139
Institutional (Medical)	36
Residential	278
Recreation/Open Space	1,147

The airfield with its 12,000 foot runway forms the west half of the base. Building development and recreational areas fills the majority of the eastern half of the base.

Hangars 1050 and 1027 are located within the Aviation Support land use zone and adjacent to the airfield area. Residential areas (accompanied housing) are located as close as 800 feet from Hangar 1050. These units are down slope (approximately 15 feet lower elevation) from the hangar facilities.

The base lies within the individual city limits of three municipalities: Fort Worth in the northern half, Westworth Village in the upper southern portion of the base and White Settlement in the lower southern portion of the base. Hangars 1050 and 1027 fall within the jurisdictional boundaries of the city of Fort Worth.

3.5.2 Adjacent Land Use

The base is located on the northwest side of the Dallas/Fort Worth metropolitan area and is surrounded by the communities of Fort Worth, Westworth Village, White Settlement, River Oaks and Westover Hills.

The area surrounding Carswell AFB has primarily been developed with a suburban character. The base is bounded along its immediate west side by Air Force Plant #4, operated by General Dynamics. The residential community of White Settlement extends all along the west border of Air Force Plant #4 and the southwest portion of Carswell AFB. On the east, the base is bordered by the West Fork of the Trinity River and by State Highway 183. Several suburban residential areas with room for future development occur east of these features. Lake Worth, a recreational area and reservoir for the Fort Worth Water Department, is located north of the base. Residential development has occurred along the northern banks of Lake Worth directly across from the end of Runway 17 (the northern end of the runway). Highway 183 parallels the southeastern portion of the base. The area south of the base is zoned commercial and a regional shopping center is located southeast of the base at the intersection of Highway 183 and Interstate 30.

3.5.3 Air Force Policies Affecting Land Uses

The Air Force developed the Air Installation Compatible Use Zone (AICUZ) program to minimize development that is incompatible with aircraft operations in areas on and adjacent to military airfields.

Municipalities, through their zoning powers, determine whether land within the AICUZ should be zoned in accordance with the AICUZ recommendations. However, the Air Force encourages cooperation by such jurisdictions when making land use decisions. Currently the local municipalities (Fort Worth and Lake Worth) have not implemented the AICUZ into their development plans and zoning. To ensure that incompatible land uses could not occur within the clear zone, the area of greatest noise and safety hazard, the Air Force acquired property rights to the clear zone acreage. The clear zones at Carswell AFB are 3,000 feet by 3,000 feet.

Chapter 3.6 depicts the day-night average sound level (DNL) used for the Carswell AFB AICUZ (last updated in 1986). Incompatible land uses (i.e. commercial and residential) due to urban encroachment exist both within the noise zones (65 dB or greater), as well as, the accident protection zones (APZ). The base receives an average of 4 noise complaints per month as a result of aircraft operations.

3.6 NOISE

Noise levels resulting from aircraft operations at Carswell AFB have been estimated as part of the Air Force AICUZ program. These estimated noise levels from aircraft were most recently updated in 1986. Since that time the Air Reserve's flying mission at Carswell AFB has been changed, replacing their F-4 aircraft with quieter F-16 aircraft. For the purposes of this analysis, the 1986 AICUZ has been used to provide a representative baseline to assess the potential environmental impacts resulting from the Proposed Action.

AICUZ noise contours are based on composite noise ratings that are calculated from flight patterns, numbers and types of aircraft, power settings, times of operations, and climatic conditions. A day-night average sound level (DNL) is used to describe the noise environment. The EPA has adopted DNL as the standard measure for estimating noise impacts. The DNL noise contours for Carswell AFB are depicted in Figure 3-3.

3.7 SOCIOECONOMICS

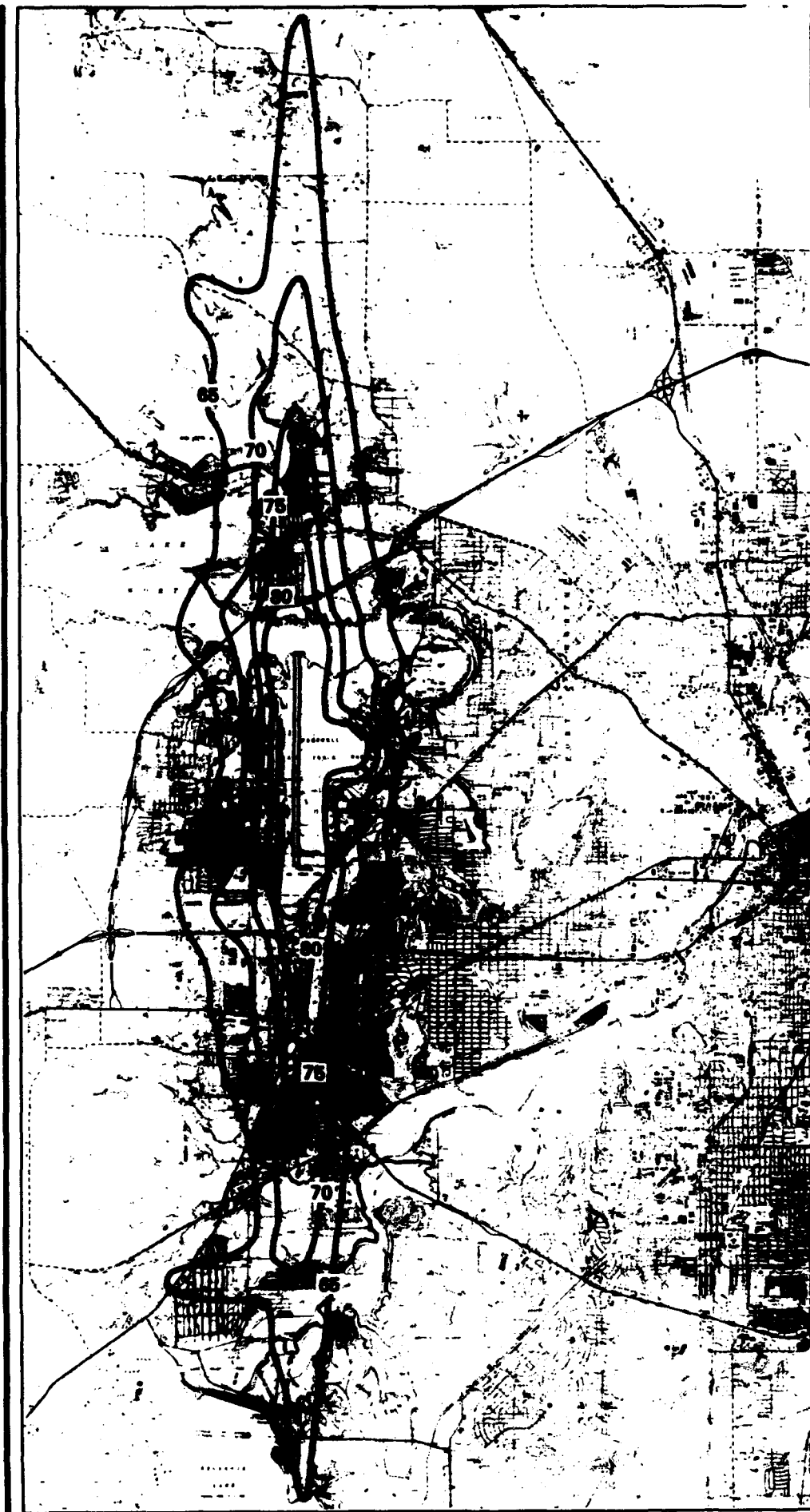
3.7.1 Region of Influence

The majority of potential employees by the city of Fort Worth's proposed sublessee already reside in the area surrounding Carswell AFB as are the majority of employees directly and indirectly employed by Carswell AFB activities. The following economic baseline analysis examines Tarrant County alone for the most part.

The economic impact of Carswell AFB on the region is considerable. Carswell AFB contributes \$746,000,000 to the Dallas-Fort Worth Metroplex based on the Carswell AFB Economic Impact Summary for FY 1990.

3.7.2 Demographics

The total population of Tarrant County area was reported as 1,170,103 in 1990. According to the U.S. Department of Housing and Urban Development (HUD 1991), the study area contains about 438,634 households. Approximately 11,000 of these households are supported by members whose jobs are associated with activities related to Carswell AFB. The area currently has excess housing capacity in both rentals and units for sale due to layoffs from Air Force Plant #4.



Current Noise Contours

Carswell AFB, Texas

Figure 3-3

EXPLANATION



3.7.3 Employment

Data on the growth rates for the major economic sectors in the statistical housing area of Fort Worth-Arlington indicate that services, government, transportation, and utilities have had the most steady growth during the period of 1980-1990 (HUD 1991). The only sectors showing continuous decreases in activity are finance, manufacturing, and mining. Despite the steady growth of the region's economy, the unemployment rate was 6.5 percent in 1990 and 8.1 percent through October of 1991.

The federal military jobs sector has experienced no growth in recent years. Based on HUD data, 6,375 direct jobs and 5,724 secondary jobs were associated with Carswell AFB as of the 1990 Census. Additionally, there are 7,782 paid military retirees in the area of Carswell AFB.

3.8 INFRASTRUCTURE

3.8.1 Utilities

Water is supplied to the base by the city of Fort Worth. The city's water comes from Lake Worth which has a surface area of 2,500 acres and is fed by the West Fork of the Trinity River. The base used 277,621,000 gallons in FY 1991 for an average daily usage of 761,000 gallons. The city of Fort Worth is presently constructing a fourth water treatment plant to supply a growing demand. Even under the current growth circumstances, there appears to be an adequate supply of water (see Chapter 3.9.1).

The Lone Star Gas Company supplies the base via its distribution lines. FY 1991 use was 187,737,000 cubic feet. The system has accommodated an annual peak demand of 285,000,000 cubic feet in 1984, resulting from an abnormally hard winter.

Texas Electric Service Company supplies electrical power by multiple feeders. During FY 1991, power use was 64,510,936 KWH. The base has in the past made provisions for meeting increased demand. Due to the number of base housing units setting vacant from renovation contract problems and energy conservation that demand is not being realized.

Carswell AFB is connected to the city of Fort Worth's Village Creek Wastewater Treatment Plant. Current average flow to the plant is 560,000 gal/day with the permit to discharge computed at 715,000 gal/day average flow. There is no upper limit for daily discharge.

The result of all the activities at Carswell AFB including aircraft maintenance's use of solvents and soaps discussed above is that while they do impact the quality of the wastewater discharge, the activities have never caused the city of Fort Worth concern over Carswell AFB discharge. The city does conduct a monthly monitoring program of Carswell AFB discharges to ensure compliance. (city of Fort Worth, 1991)

3.8.2 Transportation

In the greater Fort Worth area, surface travel is mostly by highway; there is no commuter rail system. The main highways serving Carswell AFB and Air Force Plant #4 are Interstates 20 (Loop 820), and 35; US 370; and State Routes 183, 199, and 341. Segments of the roads in Tarrant County are characterized

by traffic volumes that exceed the design volume. Data show that more than 85% of the base's employees live in Tarrant County.

Despite the somewhat limited access to Carswell AFB (Route 183 is the main feeder to the installation) the level of service near the base is not seriously degraded during peak hours. The Texas State Highway Commission currently only has plans for the widening of Clifford Street, access to Air Force Plant #4 from the west off of Loop 820.

The base is not currently serviced by rail as the spur has been removed. Air Force Plant #4 does have an active spur off Missouri-Pacific trackage which Carswell AFB could utilize.

The airfield of Carswell AFB was designed predominately to service heavy bombers such as the B-52. Airfield pavements that support such aircraft are structurally sufficient to service any civilian or military craft without degradation. The runway is 12,000 ft long and 300 ft wide. This length and width is more than adequate for any aircraft. Taxiway and aircraft parking features are also adequate for ground movement and parking of any aircraft.

3.8.3 Facilities

Base facilities for the most part are adequate for Carswell AFB activities and have systems to support year round operation in the temperate climate of Texas. Some base facilities were constructed using asbestos containing materials (ACMs). The Base Civil Engineer and Bioenvironmental Engineer share responsibilities in ensuring that these materials are in a condition that will not pose a threat to the human environment. There is no known existing threat to employees or residents of base facilities. The Base Civil Engineer is continuing a survey of all facilities to quantify and locate all ACMs.

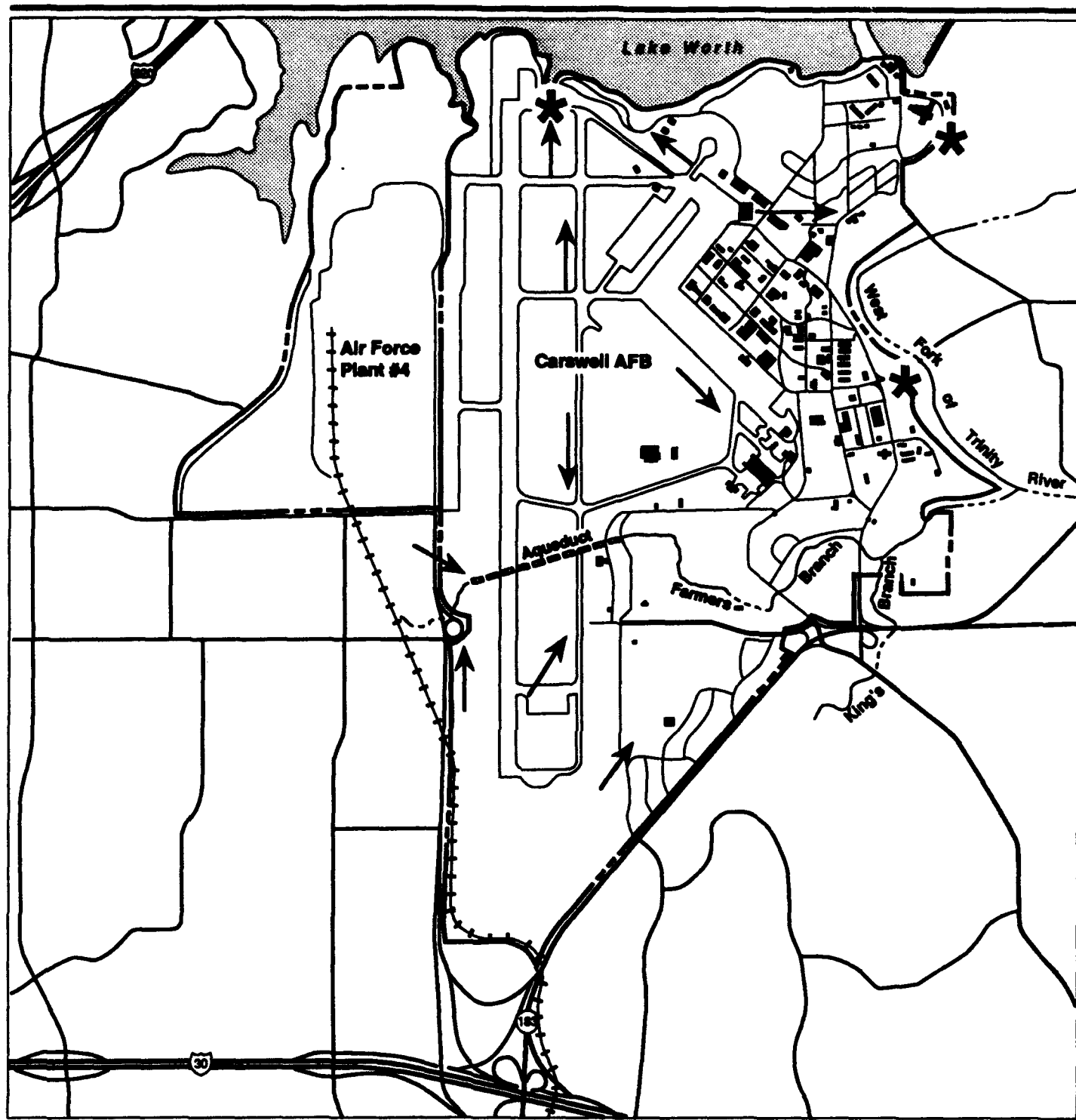
3.9 WATER RESOURCES

3.9.1 Surface Water

Surface water resources in the vicinity of Carswell AFB include Lake Worth, the West Fork of the Trinity River, Farmer's Branch, Kings Branch, and a few ponds in the golf course (Figure 3-4). Lake Worth, a man-made reservoir bordering the north boundary of Carswell AFB, has a surface area of about 2,500 acres. The West Fork of the Trinity River forms the eastern boundary of the base. Farmer's Branch, a tributary to the Trinity River, flows eastward through the southern portion of the base into the West Fork. King's Branch flows into Farmer's Branch at the eastern edge of the base.

The closest surface water body in the vicinity of Hangars 1050 and 1027 is Farmer's Branch, located about 1,200 feet south of Hangar 1050.

Water is treated and supplied to Carswell AFB by the Fort Worth Water Department, which draws its water source from three reservoirs; Lake Bridgeport, Eagle Mountain Lake and Lake Worth. Fort Worth Water Department has no constraints in supplying the water demand at Carswell AFB. In FY 1991, an average of 761,000 gallons of water per day was provided to the base.



EXPLANATION

- Surface Drainage Direction
- - - Stream Channel
- * Stormwater Discharge Points
- - - Base Boundary

0 625 1250 2500 Feet



Carswell/008

Surface Drainage

Carswell AFB, Texas

Figure 3-4

3.9.2 Surface Drainage

Carswell AFB lies within the Trinity River drainage system. Surface drainage at the base flows into tributaries of the West Fork of the Trinity River and Lake Worth. An improved aqueduct conducts surface runoff generated from areas west of the base eastward into Farmers Branch. There are three stormwater discharge points on base that are subject to the National Pollutant Discharge Elimination System (NPDES) permit and monitoring requirements. These points, located on the north and east end of the base, discharge into Lake Worth, and into the West Fork of the Trinity River. All industrial wastewater generated on base is channeled through oil/water separators into either the sanitary or storm sewer system. The oil/water separators are inspected monthly and emptied every three months.

Wastewater generated in Hangar 1027 is drained into an oil/water separator and then discharged into the sanitary sewer system. Wastewater generated from the outside wash area is processed through an oil/water separator and then discharged into the stormwater system which flows into the West Fork of the Trinity River.

3.9.3 Floodplains

The 100-year floodplain is primarily contained within the banks of the West Fork of the Trinity River and Farmer's Branch, which traverses the base. Hangars 1050 and 1027 are located approximately 1,200 feet north of the 100-year flood plain of Farmer's Branch.

3.9.4 Groundwater

Five hydrogeologic units can be identified beneath Carswell AFB. From shallowest to deepest, these units are 1) an upper perched-water zone in alluvial terrace deposits; 2) a dry limestone aquitard in the Goodland and Walnut formations; 3) an aquifer in the Paluxy Sands; 4) an aquitard of limestone in the Glen Rose formation; and 5) a major sandstone aquifer in the Twin Mountain formation.

Water held in the alluvium close to the Trinity River is used primary for irrigation, however, this groundwater is not economical to develop as a drinking water source due to the water's variable distribution and potential for surface and stormwater pollution.

The Paluxy Aquifer is a source of potable groundwater and has been extensively used in the Fort Worth area. Recharge to the Paluxy Aquifer occurs where the formation outcrops west of the base in the vicinity of Air Force Plant #4 and in the bed of Lake Worth. Regional groundwater flow is south to southeastward. The base does not develop water from this source. The deep sandstone aquifer is also used as a potable water supply in the region.

3.10 BIOLOGICAL RESOURCES

3.10.1 Vegetation

Carswell AFB is located in the Cross-Timbers and Prairie vegetational area of north central Texas, which is a zone of transition for many plant and animal species (Niehaus, 1988). The region is predominantly grass covered although numerous tree species occur along stream banks. Dominant native and cultivated grasses include little bluestem, indian grass, big bluestem, side oats, assorted grains, and buffalo grass; common woody species include oak, elm, pecan, hackberry, and sumac. Non-native species such as

catalpa and chinaberry, also occur. Although the base has not been surveyed for biological resources, no threatened, endangered, or rare plant species are known to occur within its boundary (Short, 1991) and most of the native grasses have been replaced, or restricted, by development. Considerable unimproved open space still remains on the base, however, that is capable of supporting semi-natural to natural ecological conditions.

3.10.2 Wildlife

Numerous birds, waterfowl, reptiles, and small mammals inhabit Carswell AFB and the surrounding region. Mourning doves, grackles, meadowlarks, mallards, and mergansers are among the most common of the flying species while cotton-tail and jack rabbits, squirrels, and opossums live in the grasses and wooded areas. Raccoons, striped skunks, coyotes, armadillos, and foxes are also common to the area and streams and lakes support a wide variety of game fish (Niehaus, 1988 and Department of the Air Force, 1990). No threatened, endangered, or rare wildlife species are known to occur on Carswell AFB (Short, 1991), although the peregrine falcon, the bald eagle, and the interior least tern are among several species in the Tarrant County migratory bird flyway.

As described in Section 2.0, the majority of activities associated with the joint and interim civilian use of Hangars 1027 and 1050 at Carswell AFB will take place within the two hangars. Construction of the associated 2,000-foot fenceline, however, would take place in two separate open spaces along the northern and southern portions of the project area where biological resources could be of concern (see Figure 2-1). A review of both sites, however, indicates that they are located in areas that have been previously disturbed, are covered with only low, grass-type vegetation, and support no detectable wildlife.

3.10.3 Sensitive Habitats

No surveys have been conducted on Carswell AFB to delineate potential wetlands. Hangars 1050 and 1027 are located about 1,200 feet from Farmer's Branch, the nearest riparian environment.

3.11 CULTURAL RESOURCES

The physiography and climate of north central Texas and the area of Carswell AFB has supported a cultural chronology which extends into the past for nearly 11,000 years. Some of the earliest known archaeological sites in North America have been discovered in this region, including the bison cliff jump at Plainview (Jennings, 1978). Other sites containing human remains and stone tools have been discovered in south central and eastern Texas and conclusively dated to this period. Later, but before european contact (16th century), the central Texas grasslands and wooded stream banks supported numerous nomadic bands that survived by hunting buffalo and small game. In more historic times, the area was home to semisedentary groups such as the Caddo, the Kiowa-Apache, and the Comanche, who had adopted agricultural practices and become less dependent on hunting the buffalo.

In addition to the Native American presence, Carswell AFB also encompasses a portion of a tract settled by early Americans. The White Settlement, which is located along the banks of Farmer's Branch Creek, dates to the late 1800s and includes period homes, a one-half-acre cemetery with 94 grave markers, and another small cemetery with 13 graves that is maintained by base personnel. Currently, one property on Carswell AFB is listed on the National Register of Historic Places (NRHP), although several others may be eligible. The listed property, known as Buck Oak's Farm, is a white stone and clapboard house

located adjacent to the golf course along White Settlement Road, about one half mile from Hangar 1050.

Carswell AFB has the potential to contain prehistoric and/or historic sites within its boundary that are representative of any, or all, of the above described cultures or periods. The West Fork of the Trinity River with its associated floodplain and grassy terraces, and Lake Worth to the north, further increase the possibility that such sites exist. The presence of an early American settlement within base boundaries increases the possibility for historic sites. As such, and in compliance with Sections 106 and 110 of the National Historic Preservation Act, a review of cultural resources for the Proposed Action was conducted.

The cultural resource area of potential effect (APE) for the joint and interim civilian use of Hangars 1027 and 1050 and the associated construction of a 2,000-foot fenceline is defined as any area subject to ground disturbance or structural modification resulting from program activities. As described in Section 2.0, the majority of activities will take place in the two hangars and will require no structural modifications. The associated 2,000-foot fenceline, however, would be constructed in two separate open areas along the northern and southern portions of the maintenance area where cultural resources could be of concern (see Figure 2-1).

In 1990, the National Park Service, Rocky Mountain Regional Office, conducted a 320-acre cultural resource survey of Carswell AFB at the request of the Texas State Historic Preservation Officer (SHPO). While the survey located five archaeological sites within the boundary of the base: two historic trash dumps/scatters, one historic building foundation footing, one historic bridge/water crossing, and one prehistoric lithic isolate (Hoffman, 1991), none of these sites were considered eligible for the NRHP. Comment by the Texas SHPO indicated that additional surface survey for cultural resources at Carswell AFB would be unnecessary (Bruseth 1991). However, the SHPO did recognize the potential for subsurface archaeological sites and suggested that this potential be considered during any future ground-disturbing activities. In addition, a historic evaluation of 32 base buildings is currently being conducted by the Air Force and is scheduled for completion in 1992. Hangars 1027 and 1050 are not included in this evaluation because of their age (built post-1950).

4.0 ENVIRONMENTAL CONSEQUENCES

This chapter presents the results of the analysis of potential environmental effects of implementing the Proposed Action and No-Action alternative. Changes to the natural and human environments that may result from the Proposed Action were evaluated relative to the affected environment as described in Chapter 3.0. For each environmental component anticipated direct and indirect effects were assessed, considering both the initiation (start-up activities) and short term (the interim operation activities) project effects. The potential for significant environmental consequences was evaluated utilizing the context and intensity considerations defined in CEQ regulations for implementing the procedural provisions of NEPA (40 CFR 1508.27).

Cumulative impacts resulting from the incremental impact of the action in conjunction with other reasonably foreseeable future actions have been considered in this analysis. The only other known outside actions that could contribute to cumulative impacts are the closure of Carswell AFB currently scheduled for September of 1993 (see Chapter 2.4).

4.1 HAZARDOUS/NON-HAZARDOUS MATERIAL USAGE AND WASTE MANAGEMENT

Under existing maintenance operations in Hangars 1027 and 1050, several hazardous materials are used (see Chapter 3.3.1). Maintenance operations under the Proposed Action would also use many of these materials. The materials would be transported, stored, and used in accordance with best industry practices, applicable regulations, and Carswell AFB and sublessee hazardous material management plans. Any spills would be addressed properly and in a timely manner.

The quantity of hazardous materials projected to be used under the Proposed Action is not large (see Chapter 2.1.2). The small quantity of materials and the precautions that would be taken to limit any environmental hazard would negate any impact from their use.

All waste collected from Proposed Action would be disposed of properly under the scrutiny of the Air Force and local regulators. The small quantity of hazardous material used would generate a small amount of waste (see Table 2-1). The waste would not be stored more than 90 days prior to transport off of Carswell AFB. No significant impacts are anticipated in the generation or disposal of these small quantities of hazardous waste.

About 1,700 pounds of miscellaneous refuse would be generated every month by the Proposed Action (see Table 2-1). Carswell AFB currently generates more than 500 tons of refuse per month, therefore, the Proposed Action will have little impact on the base's solid waste generation.

The Proposed Action will not occupy any areas which are under investigation for remediation consideration. Therefore, its impact on the IRP is anticipated to be negligible.

4.2 AIR QUALITY

The Proposed Action will result in air emissions from motor vehicles, aircraft flight operations, and aircraft maintenance operations such as stripping and painting.

4.2.1 Motor Vehicles

Under the Proposed Action, the majority of additional personnel would already reside in the surrounding areas; therefore, impacts to air quality due to motor vehicle emissions are expected to be minimal. In addition, motor vehicle emissions associated with the Proposed Action would be "off-set" by the decrease in activities associated with the drawdown and closure of Carswell AFB. Overall, Carswell AFB would experience decreases in the pollutants (NO_x and HC) that contribute to the formation of ozone. The Proposed Action in conjunction with the base drawdown would result in a beneficial cumulative effect to the county's goal to reach attainment of federal standards for ozone.

4.2.2 Aircraft Operations

Under present flying operations, Carswell AFB handles about 1,600 flight operations (see Table 3-3) per month involving 4- to 8-engine aircraft. The B-52H, an 8-engine aircraft, makes up 40 percent of these operations. These flights emit about 435 tons per month of pollutants, mainly hydrocarbons, carbon monoxide and nitrous oxide. Flight operations associated with the Proposed Action are estimated to be about 30 operations per month or less than two (2) percent of the current flight activity. In addition, the proposed commercial aircraft generate less pollutants per operation than the fleet currently operating out of Carswell AFB. The 727s and occasional MD-80 and DC-8 aircraft flights, when added to existing emissions, are not expected to cause significant impacts due to the lower emissions associated with the aircraft and the small percent increase in flight activity.

Emissions associated with the Proposed Action would be "off-set" by the decrease in aircraft operations associated with the drawdown and closure of Carswell AFB. This would result in a beneficial effect to the county's goal to reach attainment status for ozone.

4.2.3 Aircraft Maintenance Operations

Stripping paint from airplanes under the Proposed Action will consume less than one gallon per month of Intex 85-65. Current Air Force use of methylene chloride for aircraft paint stripping at Carswell AFB is estimated to be 2 quarts per month. No new contaminants would be entering the atmosphere or waste streams. The paint stripping operations would be conducted in accordance with TACB regulations and permits and no significant impacts are expected.

Aircraft painting under the Proposed Action would consist of minor touch-up aircraft painting. It is estimated that about 5 gallons of coatings will be used per month. All of those coatings meet the TACB requirements and will be applied by spray can or electro-static spray systems. Degreasing preparatory to painting would involve the use of approximately 35 gallons of solvents (30 gallons of chloroethene and 5 gallons of MEK). All solvents will be used in compliance with TACB regulations and permits. The estimated annual emissions of hydrocarbons resulting from the aircraft maintenance operations would be about 2.4 tons, or less than 0.2 percent increase in THC emissions at Carswell AFB. Therefore, no significant impacts are expected from the operations.

Aircraft maintenance emissions of hydrocarbons associated with the Proposed Action would be "off-set" by the decrease in aircraft maintenance activities associated with the drawdown and closure of Carswell AFB. This would result in a beneficial effect to the county's goal to reach attainment status for ozone.

4.3 LAND USE

On-base land use conflicts are not expected under the Proposed Action. The types of land uses associated with the commercial aircraft maintenance operations and support facilities would be similar to the land uses currently in affect within the flightline area by the Air Force. In addition, the general character of the base would be compatible with the land uses associated with the Proposed Action due to the industrial nature of the base.

Construction activities of the fenceline may have a temporary minor constraint on existing operations and land uses, however after construction, the fencing is not expected to interfere with the existing military functions.

The proposed activities would not result in off-base land use conflicts. Because the Proposed Action would occur on base without new facility construction or building modification, no impacts to off-base land uses would occur. There will not be significant changes to the noise contours generated by the Proposed Action flight activities, therefore, Air Force policies regarding adjacent land uses will remain unchanged.

No cumulative impacts would result from the Proposed Action in combination with the base drawdown and closure activities.

4.4 NOISE

Minimal noise impacts would result from the Proposed Action. The 360 annual flight operations associated with the Proposed Action would increase the total operations at Carswell AFB by less than two (2) percent. In addition, the aircraft used in the Proposed Action would be quieter than the military aircraft currently in use. Table 4-1 shows the comparison of noise effects caused by the existing types of aircraft at Carswell compared to the Proposed Action aircraft using the maximum sound level (L_{max}).

Table 4-1. Comparison of Aircraft Noise Levels

AIRCRAFT TYPE	LMAX AT TAKE-OFF
Carswell AFB Aircraft	
F-16 (with afterburner)	113.0 dB
B-52H	105.5 dB
KC-135A	102.5 dB
Proposed Action Aircraft*	
727-200	102.4 dB
DC-09-50	97.8 dB
MD-80	97.3 dB

* Assumes the noisiest engine model for the aircraft model.

Source: FAA, 1988; Omega Database accompanying NOISEMAP.

These lower noise levels, combined with the limited flight operations per month will not significantly increase the current aircraft noise levels at the base.

The additional 15 run-up operations per month proposed in this action, should not significantly increase the noise levels currently experienced by the military engine run-up activities. The proposed run-up operations represent a 17 percent increase in maintenance-related run-up activities (assuming 90 operations per month), and a 10 percent increase in overall run-up activities. These run-up activities would occur primarily between 6 am to 10 pm to reduce the noise impacts to sensitive receptors.

Cumulative noise impacts resulting from the Proposed Action in conjunction with the base drawdown and closure activities are not expected. Noise levels will be reduced as the B-52s and the KC-135 aircraft are removed from the base from fall of 1992 to spring of 1993, however, the F-16 aircraft will continue to operate out of Carswell AFB. Their operations will continue to generate more noise than the loudest commercial aircraft used in the Proposed Action. Overall noise levels due to aircraft operations will be reduced after the Fall of 1992.

4.5 SOCIOECONOMICS

The region of influence will not be significantly affected by the Proposed Action. The Proposed Action will bring an estimated additional payroll of \$6,500,000 to the region. The overall size of Tarrant County's existing economy will not be significantly impacted and no environmental effects from the Proposed Action's slight socioeconomic impacts are foreseen.

The total population of the county area will not see a significant impact from the Proposed Action. The city of Fort Worth estimates only 15 to 25 household movements due to the action as the majority of the sublessee's workforce already resides in the Fort Worth area. The existing housing market can easily absorb such a small influx; both sale and rental units are readily available.

The 200 jobs generated by the Proposed Action will help offset the negative impact of closure of Carswell AFB and recent past lay offs at Air Force Plant #4.

4.6 INFRASTRUCTURE

4.6.1 Utilities

The increase in water usage from the Proposed Action would be approximately 3,000,000 gallons per year to support aircraft washing activities. This would be only about a one (1) percent increase in water usage from FY 1991 total base usage of 277,621,000 gallons. Such an insignificant increase would have little impact on water supply on the base or to the base from the city of Fort Worth.

The increase in natural gas usage from the Proposed Action would be approximately 8,000,000 cubic feet per year. This would basically double the usage of natural gas in Hangar 1027 to accommodate the additional hot water needed to wash aircraft and heat the hangars 24 hours a day as required. This would represent a four (4) percent increase in gas usage over FY 1991 base consumption, but is far below the maximum demand placed on the servicing systems in 1984.

The increase in electrical usage from the Proposed Action would be approximately 45,000 KWH per year. This would be a seven (7) percent increase in usage above the FY 1991 base consumption of

64,510,936 KWH. The existing infrastructure for electrical service would not be significantly impacted by such an increase; much of the additional usage will occur during off peak hours due to the 24 hour activities of the sublessee.

The increase in sanitary sewerage from the Proposed Action is anticipated to result from treatment of the 3,000,000 gallons of water used. This would be an increase of less than two (2) percent over the base's FY 1991 discharge. Such a slight increase will not pose a significant impact on the city of Fort Worth's treatment facilities or the base's sewer system.

No cumulative impacts would result from the Proposed Action in combination with the base draw down and closure activities.

4.6.2 Transportation

The Proposed Action will have minimal impacts to the existing transportation infrastructure. Roadways are of sufficient strength to handle the light vehicular traffic generated by the Proposed Action without a need for upgrade. Under present schedules, three shifts will be utilized with the largest shift's work force being 100 employees. Based upon the total volume of present traffic to the base (in excess of 20,000 trips per day), the additional number of vehicles used will not generate significant adverse impacts.

The Proposed Action does not consider use of rail transport so there is no impact to rail transportation in the area.

The airfield of Carswell AFB was designed predominately to service heavy bombers such as the B-52. Airfield pavements that support such aircraft are structurally sufficient to service the majority of civilian or military craft without structural degradation. The Proposed Action's aircraft are medium weight aircraft and their use of the airfield would not cause structural degradation.

No cumulative impacts would result from the Proposed Action in combination with the base draw down and closure activities.

4.6.3 Facilities

Hangar 1050 does have asbestos containing materials (ACMs). The Base Civil Engineer and Bioenvironmental Engineer share responsibilities in ensuring that these materials are maintained in a condition that will not pose a threat to the human environment. There is no known existing threat to employees working in these facilities. The activities of the Proposed Action should not affect the ACMs.

No cumulative impacts would result from the Proposed Action in combination with the base draw down and closure activities.

4.7 WATER RESOURCES

Since the present facilities were designed to conduct surface water to existing sewer and storm drain system and no new pavements or impervious surfaces will be constructed, no impacts to surface drainage are expected.

Currently, the activities at Carswell AFB use about 277.6 million gallons per year. Estimated use by this action would increase the water usage by about 3 million gallons per year. Based on the current use and the existing water supply available from the Fort Worth Water Department, this action would have no significant impact on surface water supply. No impacts to groundwater are expected.

The Proposed Action would not add to cumulative impacts on water resources in the area.

4.9 BIOLOGICAL RESOURCES

Most of the activities associated with joint and interim use of Hangars 1027 and 1050 at Carswell AFB would not affect biological resources because they would take place in existing facilities and on paved areas. Although the construction of the associated 2,000-foot fenceline would take place in open space, that space has been previously disturbed, supports no threatened, endangered, or rare wildlife or plant species, and no wetlands. Activities and noise associated with construction would have only short-term effects on local wildlife by causing those species intolerant of such disturbances to temporarily avoid the vicinity of the project. In addition, some loss of grass cover would occur from the digging of the fenceline; however, no sensitive grass species have been identified on the base, and therefore, the loss of this small amount of vegetation is not considered significant. Overall, no significant direct, indirect, or cumulative impacts are expected to occur to biological resources from this Proposed Action.

4.9 CULTURAL RESOURCES

Because no known prehistoric or historic archaeological sites are known to exist within the APE and because the existing facilities to be used in the Proposed Action are not eligible for the NRHP, there are no significant direct, indirect, or cumulative impacts expected to this resource from proposed activities. However, in light of the physiographic nature and cultural history of the region and because five cultural resource sites are already known to exist within the boundary of the base, there is a potential for subsurface cultural resources to exist in the area of the proposed 2,000-foot fenceline. In the event that any such resources are unexpectedly encountered during the course of the undertaking, construction should immediately cease and the base Historic Preservation Officer, or a qualified archaeologist consulted. Subsequent actions would comply with 36 CFR 800.11 and the Native American Graves Protection and Repatriation Act (NAGPRA).

4.10 ENVIRONMENTAL CONSEQUENCES OF THE NO-ACTION ALTERNATIVE

If the proposed civilian joint use of Hangars 1027 and 1050 is not implemented, the current military operations at Carswell AFB would remain unchanged from current plans, and no additional environmental consequences would be anticipated.

4.11 IRREVERSIBLE OR IRRETRIEVABLE COMMITMENT OF RESOURCES

There are no irreversible or irretrievable commitments of resources. In addition, there are no adverse environmental impacts that cannot be avoided.

5.0 CONTACTS AND CONSULTATION

Col Paul J. Miklas	7th Wing/LG
Lt Col Derrick Curtis	7th Wing/CCT
CMSgt John Adams	7th Wing/CCT
TSgt Mike Lovell	7th Wing/DEV
Mr James Toal	Carswell AFB Reuse Task Force, city of Fort Worth
Mr Charles Staples	7th Wing/CCT
Mr Randy Varner	7th Wing/DEV
Ms Sylvia Walker	7th Wing/DER
SMSgt Joseph Marchoine	7th Wing OSS/DOB
Mr Spencer Sovoi	Texas Air Control Board
Mr Eddie Mack	Texas Air Control Board
Mr Bob Gill	Texas Air Control Board
Ms Bertha Davis	Fort Worth Water Department
Mr Joe Balerdi	Fort Worth Planning Department

6.0 LIST OF PREPARERS

Thomas Bartol, Lt Col, USAF, Director of Environmental Planning, AFCEE/ESE
B.S., 1972, Civil Engineering, U.S. Air Force Academy, Colorado Springs, Colorado
M.S., 1980, Management, Purdue University, West Lafayette, Indiana
Years of Experience: 19

Sandra Cuttino, Environmental Manager, The Earth Technology Corporation
B.S., 1979, Civil Engineering, University of California, Davis
Years of Experience: 10

Carol Duecker, Environmental Specialist, The Earth Technology Corporation
B.S., 1984, Earth Sciences, University of California, Santa Cruz
Years of Experience: 7

Peyton, Paige M., Senior Project Environmental Specialist in Cultural Resources, The Earth Technology Corporation
B.A., 1987, Anthropology, California State University, San Bernardino
M.A., 1990, Anthropology/Geography, California State University, San Bernardino
Years of Experience: 6

Robert Poll, Health and Safety Manager, The Earth Technology Corporation
B.S., 1985, Nuclear Engineering, Rensselaer Polytechnic Institute, New York
Years of Experience: 5

Dennis Sullivan, Major, USAF, Chief, Closure Management, AFCEE/ESE
B.S., 1973, Civil Engineering, Purdue University, West Lafayette, Indiana
M.S., 1979, Civil Engineering, University of New Mexico, Albuquerque
Years of Experience: 18

Mary L. Vroman, Major, U.S. Air Force, Deputy, Programs and Environmental Division, AFRCE-BMS/DEVP
B.S., 1977, Engineering Operations, Iowa State University
M.S., 1986, Engineering Management, Air Force Institute of Technology
Years of Experience: 12

7.0 DISTRIBUTION LIST

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**HQ AFESC/BD
Pentagon**

**Regional Compliance Office
AFRCE-ESD
Dallas, TX**

**7th Wing/CCT
Carswell AFB, TX**

**7th Wing/DE
Carswell AFB, TX**

Federal, State, and Local Agencies

**EPA Region VI
Office of Federal Activities
Dallas, TX**

**FAA
Office of Airport Planning
Dallas, TX**

**Texas Clearinghouse
Governor's Office of Budget and Planning
Austin, TX**

**Carswell AFB Task Force
Fort Worth, TX**

8.0 ACRONYMS

ACM	Asbestos Containing Material
AD	Air-worthiness Directives
AFB	Air Force Base
AFR	Air Force Regulation
AFRES	Air Force Reserves
APZ	Accident Potential Zone
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CEQ	Council on Environmental Quality (The President's)
CO	Carbon dioxide
CY	Calendar year
CZ	Clear Zone
dB	Decibels
DERP	Defense Environmental Restoration Program
DoD	Department of Defense
DRMO	Defense Reutilization and Marketing Office
EA	Environmental Assessment
EIS	Environmental Impact Statement
EPA	Environmental Protection Agency
FAA	Federal Aviation Administration
FY	Fiscal year
FONSI	Finding of No Significant Impact
HC	Hydrocarbons
HUD	Housing and Urban Development, U.S. Department of

IRP	Installation Restoration Program
Lmax	Loudness, maximum
LTO	Landing and take off
MEK	Methyl ethyl ketone
MSDS	Material Safety Data Sheet
NAAQS	National Ambient Air Quality Standards
NDI	Non-destructive Inspection
NEPA	National Environmental Policy Act
NO_x	Nitrogen oxide
NPDES	National Pollution Discharge Elimination System
NPL	National Priorities List
NRHP	National Register of Historic Places
PA	Particulates
RCRA	Resource Conservation and Recovery Act
RFI	RCRA Facility Inspection
SARA	Superfund Amendments and Reauthorization Act
SIP	State Implementation Plan
SO_x	Sulphur dioxide
TACB	Texas Air Control Board
TGO	Touch and go
THC	Total hydrocarbons
UIP	Used in Process
VOC	Volatile organic compound

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