# Chapter One
# INVENTORY

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# Inventory

This chapter presents an overview of Georgetown Municipal Airport (GTU) and its relationship to the surrounding community. The background information in this chapter will be used in later stages of the noise compatibility planning process and is as follows:

- A description of the setting, local climate, and historical perspective of the airport.
- A description of airspace and air traffic control.
- A description of key airport facilities and navigational aids.
- A description of existing land uses in the study area.
- A discussion of the local land use planning and regulatory framework within the study area.

This noise study involves the preparation of two official documents: the Noise Exposure Maps (NEM) and the Noise Compatibility Program (NCP).


The NEM document is a baseline analysis showing existing and potential future noise conditions at the airport. It will include Chapters One, Two, Three, and Four, of this Study. The NCP document, which will include Chapters Five, Six, and Seven, presents a plan for effectively dealing with adverse noise impacts based on a three-part perspective. First, it addresses steps to abate or reduce aircraft noise. Second, it addresses noise mitigation techniques to reduce the impact of noise on sensitive land uses in the area. Third, it addresses land use planning to encourage future development that is compatible with the airport.

A glossary in the section titled ***Technical Information Papers*** at the

back of this document provides a description of airport terms and acronyms.

## *JURISDICTIONS AND RESPONSIBILITIES*

Reduction of aircraft noise impacts is a complex issue with several parties sharing in the responsibility: the federal, state, and local governments; planning agencies; the airport proprietor; airport users; and local residents. All interests must be considered in the noise compatibility planning process.

### FEDERAL

Aviation plays a vital role in interstate commerce. Recognizing this, the federal government has assumed the role of coordinator and regulator of the nation's aviation system. Congress has assigned administrative authority to the Federal Aviation Administration (FAA). Specific responsibilities of the FAA include:

- The regulation of air commerce in order to promote its development, safety, and to fulfill the requirements of national defense.
- The promotion, encouragement and development of civil aeronautics.
- The control of the use of navigable airspace and the regulation of civil and military aircraft operations to promote the safety and efficiency of both.
- The development and operation of a common system of air traffic control and navigation for both military and civil aircraft.

The FAA also administers a program of federal grants-in-aid for the development of airport master plans, the acquisition of land, and for the planning, design and construction of eligible airport improvements. In addition, Congress has passed legislation and the FAA has established regulations governing the preparation of noise compatibility programs. Laws and regulations were also implemented that required the conversion of the commercial aircraft fleet to quieter aircraft.

### F.A.R. Part 150 Noise Compatibility Studies

The *Aviation Safety and Noise Abatement Act of 1979* (ASNA, P.L. 96-193), signed into law on February 18, 1980, was enacted, ". . . to provide and carry out noise compatibility programs, to provide assistance to assure continued safety in aviation, and for other purposes." The FAA was vested with the authority to implement and administer the Act.

Federal Aviation Regulation (F.A.R.) Part 150, the administrative rule promulgated to implement the Act, sets requirements for airport operators who choose to undertake an airport noise compatibility study with federal funding assistance. As previously discussed, F.A.R. Part 150 provides for the development of two final documents: noise exposure maps and a noise compatibility program.

***Noise Exposure Maps.*** The noise exposure maps document (NEM) shows existing and future noise conditions at the airport. It can be thought of as a baseline analysis defining the scope of the noise situation at the airport and includes maps of noise exposure for the current year and a five-year forecast. The noise contours are shown on a land use map to reveal areas of non-compatible land use. The document includes detailed supporting information explaining the methods used to develop the maps.

F.A.R. Part 150 requires the use of standard methodologies and metrics for analyzing and describing noise. It also establishes guidelines for the identification of land uses which are incompatible with noise of different levels. Airport proprietors are required to update noise exposure maps when changes in the operation of the airport would create any new, substantial non-compatible use. This is defined as an increase in the Yearly Day-Night Average Sound Level (DNL) of 1.5 decibels over noncompatible land uses.

A limited degree of legal protection can be afforded to the airport proprietor through preparation and submission of noise exposure maps. Section 107(a) of the ASNA Act provides that:

> *No person who acquires property or an interest therein . . . in an area surrounding an airport with respect to which a noise exposure map has been submitted . . . shall be entitled to recover damages with respect to the noise attributable to such airport if such person had actual or constructive knowledge of the existence of such noise exposure map unless . . . such person can show –*
>
> *(i) A significant change in the type or frequency of aircraft operations at the airport; or*
>
> *(ii) A significant change in the airport layout; or*
>
> *(iii) A significant change in the flight patterns; or*
>
> *(iv) A significant increase in night-time operations occurred after the date of acquisition of such property . . .*

The ASNA Act provides that "constructive knowledge" shall be attributed to any person if a copy of the noise exposure map was provided to him at the time of property acquisition, or if notice of the existence of the noise exposure map was published three times in a newspaper of general circulation in the area. In addition, F.A.R. Part 150 defines "significant increase" as an increase of 1.5 DNL. For purposes of this provision, FAA officials consider the term "area surrounding an airport" to mean an area within the 65 DNL contour. (See F.A.R. Part 150, Section 150.21 (d), (f) and (g).)

Acceptance of the noise exposure maps by the FAA is required before it will approve a noise compatibility program for the airport.

***Noise Compatibility Program.*** A noise compatibility program includes provisions for the abatement of aircraft noise through aircraft operating

procedures, air traffic control procedures, airport regulations, or airport facility modifications. It also includes provisions for land use compatibility planning and may include actions to mitigate the impact of noise on noncompatible land uses. The program must contain provisions for updating and periodic revision.

F.A.R. Part 150 establishes procedures and criteria for FAA evaluation of noise compatibility programs. Among these, two criteria are of particular importance: the airport proprietor may take no action that imposes an undue burden on interstate or foreign commerce, nor may the proprietor unjustly discriminate between different categories of airport users.

With an approved noise compatibility program, an airport proprietor becomes eligible for funding through the Federal Airport Improvement Program (AIP) to implement the eligible items of the program.

The FAA established a policy in 1998 for F.A.R. Part 150 approval and funding of noise mitigation measures. The FAA will not approve measures in Noise Compatibility Programs proposing corrective noise mitigation actions for new noncompatible development that is allowed to occur in the vicinity of airports after October 1, 1998, the effective date of this policy. As of the same effective date, AIP funding under the noise set-aside will be determined using criteria consistent with this policy. Specifically, corrective noise mitigation measures for new noncompatible development that occurs after October 1, 1998 will not be eligible for AIP funding under the noise set-aside regardless of previous FAA approvals under F.A.R. Part 150.

This policy increases the incentives for airport operators to discourage the development of new non-compatible land uses around airports and to assure the most cost-effective use of federal funds spent on noise mitigation measures.

The latest policy does not affect funding under the Airport Improvement Program for noise mitigation projects that do not require Part 150 approval, that can be funded with Passenger Facility Charges (PFC) revenue, or that are included in FAA-approved environmental documents for airport development.

### F.A.R. Parts 36 And 91 Federal Aircraft Noise Regulations

The FAA has required reduction of aircraft noise at the source through certification, modification of engines, or replacement of aircraft. F.A.R. Part 36 prohibits the further escalation of noise levels of subsonic civil turbojet and transport category aircraft. It also requires new airplane types to be markedly quieter than earlier models. Subsequent amendments have extended the noise standards to include small, propeller-driven airplanes and supersonic transport aircraft.

F.A.R. Part 36 has three stages of certification. Stage 3 is the most rigorous and applies to aircraft certificated since November 5, 1975; Stage 2 applies to aircraft certificated between December 1, 1969 and

November 5, 1975; and Stage 1 includes all previously certificated aircraft.

F.A.R. Part 91, Subpart I, known as the "Fleet Noise Rule," mandated a compliance schedule under which Stage 1 aircraft were to be retired or refitted with hush kits or quieter engines by January 1, 1988. A very limited number of exemptions have been granted by the U.S. Department of Transportation for foreign aircraft operating into specified international airports.

Pursuant to the Congressional mandate in the *Airport Noise and Capacity Act of 1990*, FAA has established amendments to F.A.R. Part 91 by setting December 31, 1999 as the date for discontinuing use of all Stage 2 aircraft exceeding 75,000 pounds. Stage II aircraft operating non-revenue flights can operate beyond the December 31, 1999 deadline for the following purposes:

- To sell, lease, or scrap the aircraft;
- To obtain modifications to meet Stage III standards;
- To obtain scheduled heavy maintenance or significant modifications;
- To deliver the aircraft to a lessee or return it to a lessor;
- To park or store the aircraft;
- To prepare the aircraft for any of these events; or
- To operate under an experimental airworthiness certificate.

Neither F.A.R. Part 36 nor Part 91 apply to military aircraft. Nevertheless, many of the advances in quiet engine technology are being used by the military as they upgrade aircraft to improve performance and fuel efficiency.

**F.A.R. Part 161**
**Regulation Of Airport Noise And Access Restrictions**

F.A.R. Part 161 sets forth requirements for notice and approval of local restrictions on aircraft noise levels and airport access. Part 161 was developed in response to the *Airport Noise and Capacity Act of 1990* (ANCA). It applies to local airport restrictions that would have the effect of limiting operation of Stage 2 or 3 aircraft. These include direct limits on maximum noise levels, nighttime curfews, and special fees intended to encourage changes in airport operations to lessen noise.

In order to implement noise or access restrictions on Stage 2 aircraft, the airport operator must provide public notice of the proposal and provide at least a 45-day comment period. This includes notification of FAA and publication of the proposed restriction in the *Federal Register*. An analysis must be prepared describing the proposal, alternatives to the proposal, and the costs and benefits of each.

Noise or access restrictions on Stage 3 aircraft can be implemented only after receiving FAA approval. Before granting approval, the FAA must find that the six conditions specified in the statute (listed below) are met.

(1) The restriction is reasonable, non-arbitrary and nondiscriminatory.

(2) The restriction does not create an undue burden on interstate or foreign commerce.

(3) The proposed restriction maintains safe and efficient use of navigable airspace.

(4) The proposed restriction does not conflict with any existing federal statute or regulation.

(5) The applicant has provided adequate opportunity for public comment on the proposed restriction.

(6) The proposed restriction does not create an undue burden on the national aviation system.

In its application for FAA review and approval of the restriction, the airport operator must include an environmental assessment of the proposal and a complete analysis addressing the six conditions. Within 30 days of the receipt of the application, the FAA must determine whether the application is complete. After a complete application has been filed, the FAA publishes a notice of the proposal in the *Federal Register*. FAA must approve or disapprove the restriction within 180 days of receipt of the completed application. Very few Part 161 studies have been undertaken since the enactment of ANCA. **Table 1A** summarizes the studies that have been done to date. Currently, no F.A.R. Part 161 Study has received FAA approval.

Airport operators that implement noise and access restrictions in violation of F.A.R. Part 161 are subject to termination of eligibility for airport grant funds and authority to impose and collect passenger facility charges.

### Air Traffic Control

The FAA is responsible for the control of navigable airspace and the operation of air traffic control systems at the nation's airports. Airport proprietors have no direct control over airspace management and air traffic control, although they can propose changes in procedures.

The FAA reviews any proposed changes in flight procedures, such as flight tracks or runway use programs, proposed for noise abatement on the basis of safety of flight operations, safe and efficient use of the navigable airspace, management and control of the national airspace and traffic control systems, effect on security and national defense, and compliance with applicable laws and regulations. Typically, FAA implements and regulates flight procedures pertaining to noise abatement through the local air traffic control manager.

## STATE AND LOCAL

Control of land use in noise-impacted areas around airports is a key tool in limiting the number of citizens exposed to noise. The FAA encourages land use compatibility in the vicinity of airports, and F.A.R. Part 150 has guidelines

**TABLE 1A**
**Summary of F.A.R. Part 161 Studies**

| Airport | Year | | Cost | Proposal, Status |
|---|---|---|---|---|
| | Started | Ended | | |
| Aspen-Pitkin County Airport, Aspen, Colorado | N.A. | N.A. | N.A. | The study has not yet been submitted to FAA. |
| Kahului Airport, Kahului, Maui, Hawaii | 1991 | 1994 | $50,000 (est.) | Proposed nighttime prohibition of Stage 2 aircraft pursuant to court stipulation. Cost-benefit and statewide impact analysis found to be deficient by FAA. Airport never submitted a complete Part 161 Study. Suspended consideration of restriction. |
| Minneapolis-St. Paul International Airport, Minneapolis, Minnesota | 1992 | 1992 | N.A. | Proposed nighttime prohibition of Stage 2 aircraft. Cost-benefit analysis was deficient. Never submitted complete Part 161 study. Suspended consideration of restriction and entered into negotiations with carriers for voluntary cooperation. |
| Pease International Tradeport, Portsmouth, New Hampshire | 1995 | N.A. | N.A. | Have not yet submitted Part 161 study for FAA review. |
| San Francisco International Airport, San Francisco, California | 1998 | 1999 | $200,000 | Proposing extension of nighttime curfew on Stage 2 aircraft over 75,000 pounds. Started study in May 1998. Submitted to FAA in early 1999 and subsequently withdrawn. |
| San Jose International Airport, San Jose, California | 1994 | 1997 | Phase 1 - $400,000 Phase 2 - $5 to $10 million (est.) | Study undertaken as part of a legal settlement agreement. Studied a Stage 2 restriction. Suspended study after Phase 1 report showed costs to airlines at San Jose greater than benefits in San Jose. Never undertook Phase 2, systemwide analysis. Never submitted study for FAA review. |
| Burbank-Glendale-Pasadena Airport | 2000 | Ongoing | Phase 1 - $1 million (est.) | Proposed curfew restricting all aircraft operations from 10:00 p.m. to 7 a.m. |

**TABLE 1A (Continued)**
**Summary of F.A.R. Part 161 Studies**

| Airport | Year | | Cost | Proposal, Status |
|---|---|---|---|---|
| | Started | Ended | | |
| Naples Municipal Airport Naples, Florida | 2000 | 2000 | Currently over $730,000<br><br>Expect an additional cost of $1.5 to $3.0 million in legal fees due to litigation. | Enactment of a total ban on Stage 2 general aviation jet aircraft under 75,000 pounds (the airport is currently restricted to aircraft under 75,000 pounds). Airport began enforcing the restriction on March 1, 2002. FAA has deemed the Part 161 Study complete; however, FAA has ruled that the restriction violated federal grant assurances. |

N.A. - Not available.

Sources: Telephone interviews with Federal Aviation Administration officials and staffs of various airports.

relating to land use compatibility based on varying levels of noise exposure. Nevertheless, the federal government has no direct legal authority to regulate land use; that responsibility rests exclusively with state and local governments.

## State

Although the State of Texas does not directly implement and administer general purpose land use regulations, it has vested cities and towns with that power through enabling legislation. Texas Statutes do not mandate the establishment of planning commissions, agencies or departments in municipalities; however, where such appointments are made, the municipality is permitted to prepare and adopt a long-range comprehensive general plan, and may regulate zoning, subdivision, and land development consistent with the plan. Texas Statutes only allow county governments to administer subdivision regulations at this time (with the exception of the Cameron and Willacy Counties in southern Texas, which are allowed to prepare and adopt comprehensive general plans and zoning ordinances to ensure the orderly development of the Padre Island area).

The State of Texas differs from many other states in that the state participates in the FAA-sponsored State Block Grant Program. As part of this program, the state applies for, receives, and disperses federal Airport Improvement Program (AIP) dollars. (In the case of F.A.R Part 150 Studies, funding is distributed from the AIP Noise Set-Aside monies.) To accomplish this, the Texas Department of Transportation (TxDOT) has established the Aviation Capital Improvements Program, which is essentially a plan for the development of general aviation. The plan contains

a detailed list of projected projects within the state, based on the anticipated funding levels of the FAA's AIP. From the plan, TxDOT determines the timing under which projects will proceed through the various planning and construction stages.

### City and County

In the Georgetown Municipal Airport study area, the City of Georgetown and Williamson County share responsibilities for land use regulation.

The City of Georgetown operates under a council-manager form of government with city staff under the direction of the City Manager. The Georgetown City Council consists of eight members -- a mayor, elected at-large, and seven council members elected from individual single-member districts.

In Williamson County, the elected five-member Commissioners Court is the overall governing and management body. The Commissioners Court is responsible for all budgetary decisions and setting the tax rate each year. Among the duties of the Commissioners Court is administration of all the business of the County, including the building and maintenance of county roads and bridges.

In addition to regulating land use, local governments may also acquire property to mitigate or prevent airport noise impacts or may sponsor sound insulation programs for this purpose.

## AIRPORT PROPRIETOR

Georgetown Municipal Airport is owned and operated by the City of Georgetown. A seven-member Airport Advisory Board oversees the general operations of the airport including maintenance and construction projects. Members of this board are appointed for two-year terms by the Mayor with the advice and consent of the City Council.

As airport proprietor, the City has limited power to control what types of civil aircraft use its airport or to impose curfews or other use restrictions. This power is limited by the rules of F.A.R. Part 161, described earlier. Airport proprietors may not take actions that (1) impose an undue burden on interstate or foreign commerce, (2) unjustly discriminate between different categories of airport users, and (3) involve unilateral action in matters pre-empted by the federal government.

The City of Georgetown may take steps to control on-airport noise by installing sound barriers and acoustical shielding and by controlling the times when aircraft engine maintenance run-up operations may take place. Within the limits of the law and financial feasibility, airport proprietors may mitigate noise, acquire land or partial interests in land, such as air rights, easements, and development rights, to assure the use of property for purposes which are compatible with airport operations.

## *AIRPORT SETTING*

The National Plan of Integrated Airport Systems (NPIAS), as established by the FAA, identifies the 3,344 airports that are important to national transportation. The NPIAS identifies Georgetown Municipal Airport as a general aviation airport.

### LOCALE

The Georgetown Municipal Airport encompasses approximately 640 acres of land and is located approximately three miles north of the heart of the City of Georgetown as shown in **Exhibit 1A**. The airport is located west of Airport Road and north of Lakeway Drive near I-35.

### CLIMATE

Weather plays an important role in the operational capabilities of an airport. Temperature is an important factor in determining runway length required for aircraft operations. The percentage of time that visibility is impaired due to cloud coverage is a major factor in determining the use of instrument approach aids. Wind speed and direction determine runway selection and operational flow.

The climate in Georgetown is humid subtropical with hot summers and mild winters. The normal daily minimum temperature ranges from 38.6 degrees Fahrenheit (F) in January to 73.9 degrees in July and the normal daily maximum temperature ranges from 58.9 degrees in January to 95.5 degrees in August. August is usually the hottest month with a mean maximum temperature of 84.8 degrees.

The region can expect approximately 31.88 inches of precipitation annually, with May being the wettest month with 4.78 inches of rain. Cloudy skies are normally predominate in this climate and, on average, there are 115 clear days each year, 114 partly cloudy days, and 136 cloudy days. The average annual wind speed in this region is 9.1 miles per hour from the south-southeast.

## *AIRPORT HISTORY*

The original airfield for Georgetown Municipal Airport was constructed in 1943 to serve as a U.S. Navy Auxiliary Field. Construction began in 1942 and was supported by both the Congress and the local city council. Since that time, the field has also been used as a training facility for the U.S. Navy ROTC, in addition to serving as a general aviation airport.

In 1990, Runway 18-36 was extended by 900 feet to 5,000 feet resulting in the relocation of Lakeway Drive on the south end of the airport. Crosswind Runway 11-29 was reconstructed in 1995 and a Medium Intensity Runway Lighting (MIRL) system was installed. Several T-hangars, conventional hangars, and associated taxiways were constructed in 1999. That same year, Runway 18-36 was rehabilitated and holding aprons were added to both ends of Runway 11-29. In 2000, a large conventional hangar and double taxiway were constructed on the north end of the terminal area. Currently, the

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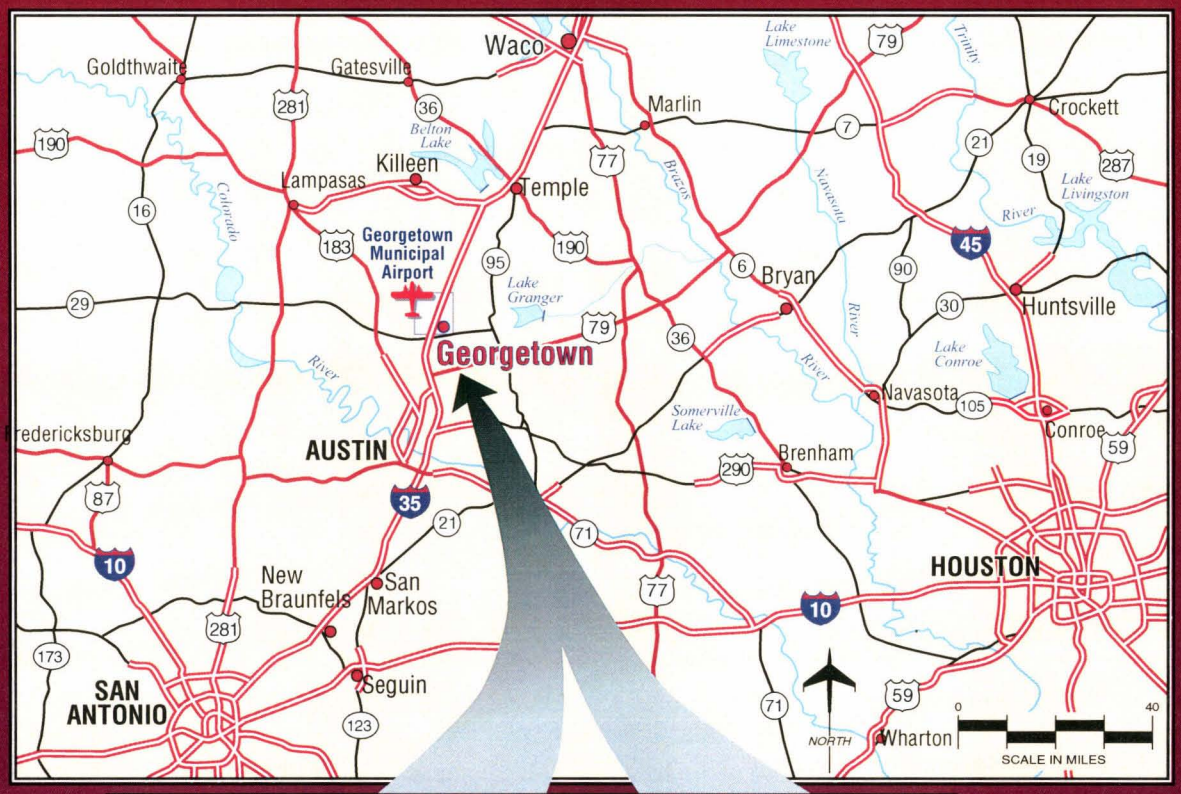


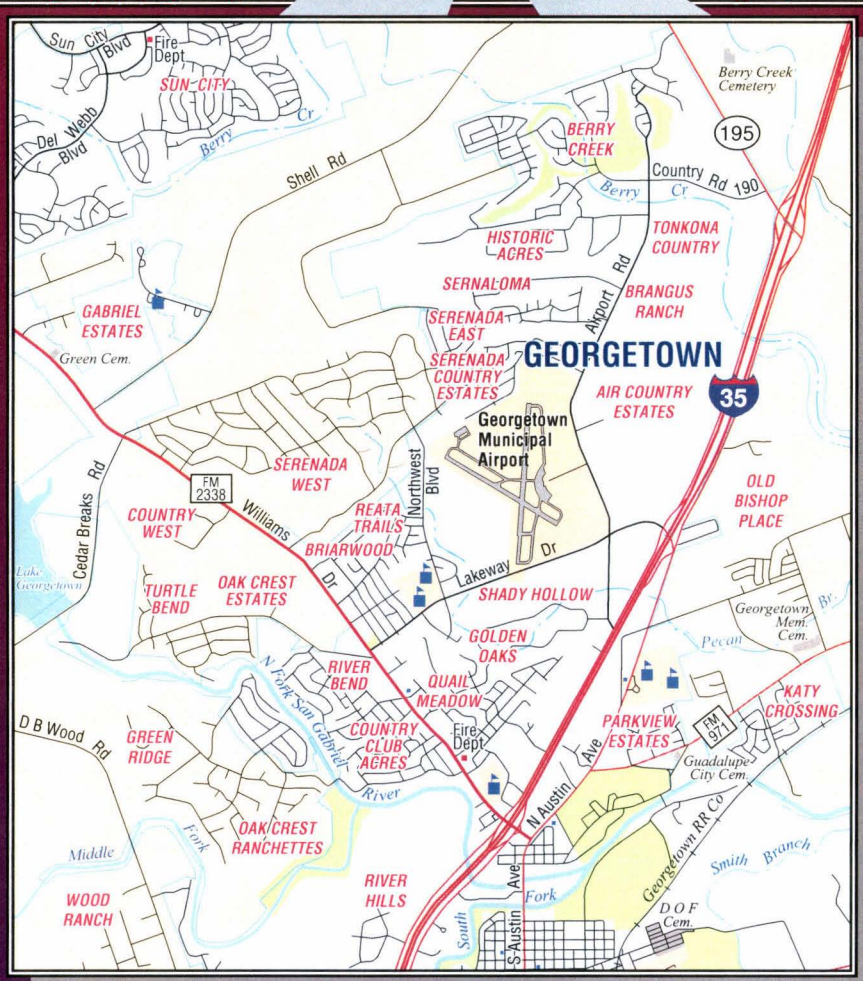


GEORGETOWN
MUNICIPAL AIRPORT

Exhibit 1A
VICINITY MAP

existing terminal is undergoing a renovation.

## *AIRPORT FACILITIES*

Airfield facilities influence the utilization of airspace and are important to the noise compatibility planning process. These facilities include the runway and taxiway systems, and aircraft and terminal activity areas. Current airfield facilities are depicted on **Exhibit 1B.**

### RUNWAYS

The existing airfield configuration at Georgetown Municipal Airport includes two intersecting runways. Runway 18-36, the primary runway, is 5000 feet long and 100 feet wide. Runway 11-29, the crosswind runway, is 4,099 feet long and 75 feet wide.

**Table 1B** summarizes runway information for Georgetown Municipal Airport. Runway pavement strengths are expressed in terms of aircraft landing gear configurations. At Georgetown Municipal Airport, both runways are designed for a single wheel loading (SWL) configuration. This refers to the design of certain aircraft landing gear which has a single wheel on each main landing gear strut. Runway 18-36 is designed for aircraft with a SWL of 30,000 pounds or less and Runway 11-29 is restricted to aircraft 12,500 pounds and lighter.

### TAXIWAYS

Runways 18-36 and 11-29 are both served by taxiways that accommodate the full length of the runways and a series of connector and exit taxiways. The taxiway system connects the runways with the terminal area and provides for the safe movement of aircraft on and around the airport. Taxiway A starts at the north end of Runway 18-36 and extends south to the apron, continuing around to the southeast corner of the apron area. Taxiway C completes the full length taxiway for Runway 18-36. Taxiway C extends from the southern end of Runway 18-36 north across Runway 11-29 to the apron area. Taxiway B serves Runway 11-29 and begins at the northwest end of the runway and continues across Runway 18-36 to the apron area. The existing taxiway system is shown on **Exhibit 1B**.

### AIRFIELD LIGHTING

Airfield lighting systems extend an airport's usefulness into periods of darkness and/or poor visibility. A variety of lighting systems are installed at the airport for this purpose. These lighting systems, categorized by function, are summarized as follows.

**Identification Lighting**: The location of an airport at night is universally indicated by a rotating beacon. A rotating beacon projects two beams of light, one white and one green, 180 degrees apart. The rotating beacon is located between the terminal building and Airport Road.

**TABLE 1B**
**Runway Information**

| | Runway | | Runway | |
|---|---|---|---|---|
| | **18** | **36** | **11** | **29** |
| Runway Length (feet)<br>Runway Width (feet) | 5,000<br>100 | | 4,099<br>75 | |
| Runway Surface Material | Asphalt | | Asphalt | |
| Runway Load Bearing Strength SWL (pounds) | 30,000 | | 12,500 | |
| Runway Markings | Non-Precision | | Basic | |
| Instrument Approach Procedures | None | | None | |
| Lighting | | | | |
| Runway Pavement Edge | Medium | Medium | Medium | Medium |
| REIL | Yes | Yes | No | No |
| PVASI | Yes | No | No | No |
| PAPI | No | Yes | No | No |
| Traffic Pattern | Left | Right | Left | Left |

Source: Airport Facility Directory, South Central United States, November 30, 2000

Notes:
SWL - Single Wheel Aircraft
PAPI - Precision Approach Path Indicator
REIL - Runway End Identifier Lights
PVASI - Pulsating Visual Approach Slope Indicator

**Runway and Taxiway Lighting**: Runway and taxiway lighting utilizes light fixtures placed near the pavement edge to define the lateral limits of the pavement. This lighting is essential for maintaining safe operations at night and/or during times of poor visibility in order to maintain safe and efficient access from the runway and aircraft parking areas. Medium intensity pavement edge lighting is provided along Runway 18-36. Lighting for Runway 18-36 is on from dusk to dawn, with intensity control via pilot radio. Medium intensity pavement edge lighting is also installed on Runway 11-29, although it is activated only by radio control. Both ends of Runway 18-36 also have Runway End Identifier Lights (REIL) installed. All taxiways have been equipped with centerline reflective markers.

**Visual Approach Lighting**: A Precision Approach Path Indicator (PAPI) lighting system is installed at the end of Runway 36. The PAPI consists of a series of four lights located near the runway threshold. When interpreted by the pilot, they give him or her a detailed indication of being above, below, or on the designed descent path until touchdown on the runway. A PAPI system has a range of five miles

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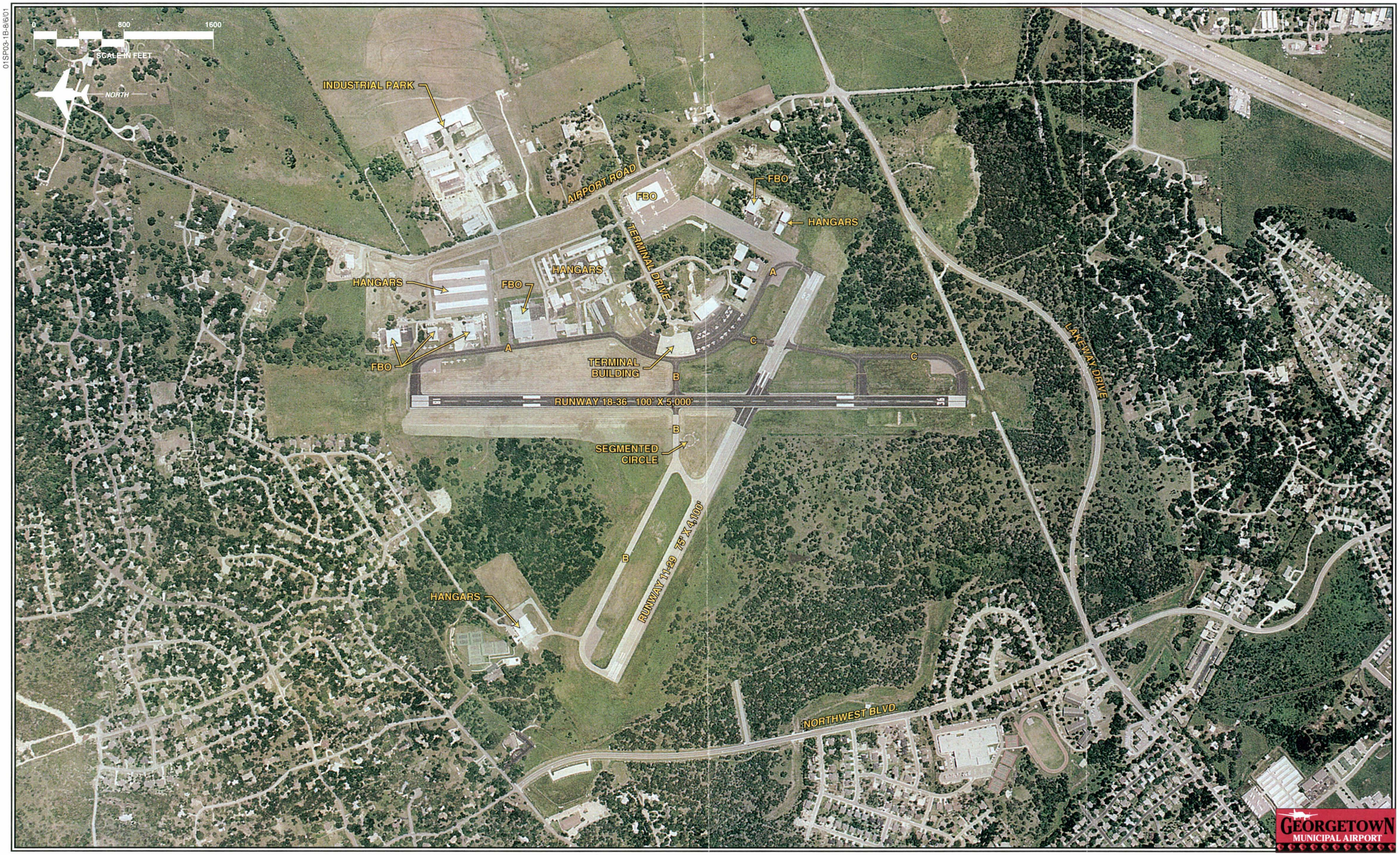


Exhibit 1B
EXISTING FACILITIES

during the day and up to nearly 20 miles during nighttime operations. A Pulsating Visual Approach Slope Indicator (PVASI) has been installed at the end of Runway 18. The PVASI works in a similar manner to the PAPI giving the pilot an indication of being above, below, or on the correct descent path.

### GENERAL AVIATION COMPLEX

General aviation amenities are contained within the terminal building. These include a pilots' lounge with access to the Direct User Access Terminal System (DUATS) and a flight planning room with a weather radar terminal.

### OTHER FACILITIES

A wide range of aviation facilities are available at Georgetown Municipal Airport. There are four facilities that provide a range of airplane maintenance and modifications. Three flight schools are located on the airport, two of which offer airplane rentals. There are four organizations that offer aircraft sales, leasing, and brokerage services. Other services available at the airport include aircraft fueling, aircraft towing, and charter flights.

## *AIRSPACE AND AIR TRAFFIC CONTROL*

The Federal Aviation Administration (FAA) Act of 1958 established the FAA as the responsible agency for the control and use of navigable airspace within the United States.

The FAA has established the National Airspace System (NAS) to protect persons and property on the ground and to establish a safe and efficient airspace environment for civil, commercial, and military aviation. The NAS covers the common network of U.S. airspace, including air navigation facilities; airports and landing areas; aeronautical charts; associated rules, regulations, and procedures; technical information; personnel and material. The system also includes components shared jointly with the military.

### AIRSPACE STRUCTURE

Since the inception of aviation, nations have set up procedures within their territorial boundaries to regulate the use of airspace. All airspace within the United States is still broadly classified as either "controlled" or "uncontrolled." The difference between controlled and uncontrolled airspace relates primarily to requirements for pilot qualifications, ground-to-air communications, navigation and air traffic services, and weather conditions. Six classes of airspace have been designated. Airspace designated as Class A, B, C, D, or E is considered controlled airspace. Aircraft operating within controlled airspace are subject to varying requirements for positive air traffic control. Several types of controlled and uncontrolled airspace exist in the Georgetown area:

- Class A airspace governs operations above 18,000 feet Mean Sea Level (MSL).

- Class C airspace surrounds towered airports served by radar approach

control such as Austin Bergstrom International Airport.

- Class D airspace encompasses traffic areas for airports with air traffic control towers.

- Class E airspace is for airports without air traffic control towers.

- Class G airspace, covering uncontrolled airspace.

Class B airspace is the only airspace classification not present in the Georgetown area. This airspace classification is reserved for airports with the greatest traffic volume in terms of IFR operations and enplaned passengers. The airspace for the study area is depicted on **Exhibit 1C.**

### Class A Airspace

Class A airspace includes all airspace from 18,000 feet above MSL to Flight Level (FL) 600 (approximately 60,000 feet MSL). This airspace is designated in F.A.R. Part 71.193 for positive control of aircraft. The Positive Control Area (PCA) allows flights governed only under Instrument Flight Rules (IFR) operations. The aircraft must have special radio and navigation equipment and the pilot must obtain clearance from an Air Traffic Control (ATC) facility to enter Class A airspace. In addition, the pilot must possess an instrument rating.

### Class C Airspace

Class C airspace is the primary airspace encompassing Austin Bergstrom International Airport. The core of the Class C airspace is circular and extends from the ground up to 4,500 feet MSL. This area has a radius of five nautical miles (NM) from the center of the airport. The outer zone extends from 2,100 feet MSL to 4,500 feet MSL and extends an additional five nautical miles beyond the core.

In order to fly inside Class C airspace, the aircraft must have two-way radio communications, an encoding transponder, and must have obtained ATC clearance. Pilots must have at least a student pilot's certificate to fly in Class C airspace.

### Class D Airspace

Class D airspace is controlled airspace surrounding airports with an Air Traffic Control Tower (ATCT) such as the Robert Gray and Hood Army Airfields (AAF). The Class D airspace typically constitutes a cylinder with a horizontal radius of four or five nautical miles from the airport, extending from the surface up to a designated vertical limit, typically set at approximately 2,500 feet above the airport elevation. The cylindrical shape will be modified if the airspace conflicts with other airports, terrain, or other obstacles, as can be seen near Hood Airfield and Killeen Airport. If an airport has an instrument approach or departure, the Class D airspace extends along the approach or departure path.

### Class E Airspace

The Class E airspace consists of controlled airspace designed to contain

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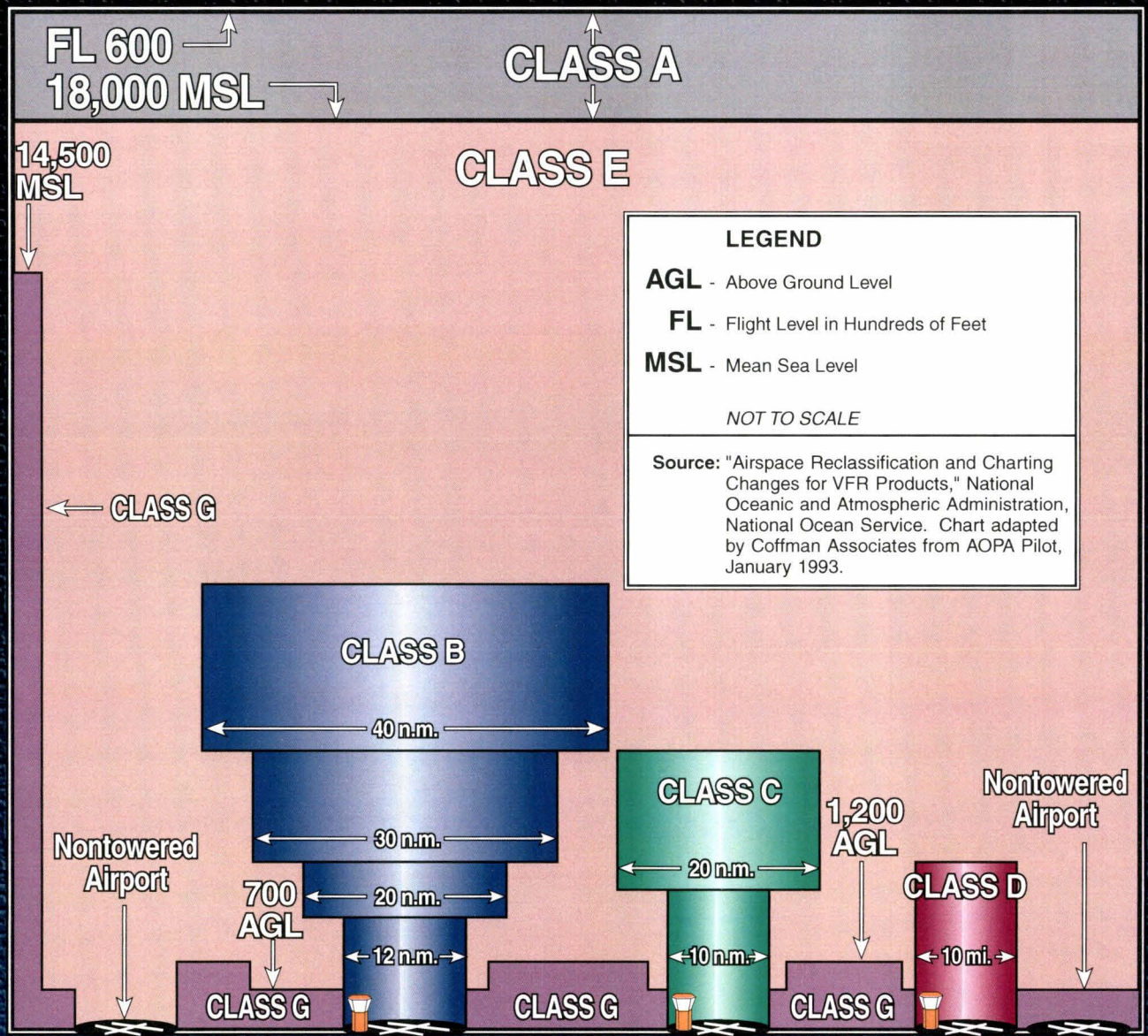



| CLASSIFICATION | DEFINITION |
|---|---|
| CLASS A | Generally airspace above 18,000 feet MSL up to and including FL 600 . |
| CLASS B | Generally multi-layered airspace from the surface up to 10,000 feet MSL surrounding the nation's busiest airports. |
| CLASS C | Generally airspace from the surface to 4,000 feet AGL surrounding towered airports with service by radar approach control. |
| CLASS D | Generally airspace from the surface to 2,500 feet AGL surrounding towered airports. |
| CLASS E | Generally controlled airspace that is not Class A, Class B, Class C, or Class D. |
| CLASS G | Generally uncontrolled airspace that is not Class A, Class B, Class C, Class D, or Class E. |

GEORGETOWN MUNICIPAL AIRPORT

Exhibit 1C
AIRSPACE CLASSIFICATION

IFR operations during portions of the terminal operation and while transitioning between the terminal and enroute environments. The cylinder shaped airspace extends upward from 700 feet above the surface when established in conjunction with an airport which has an instrument approach procedure, or from 1,200 feet above the surface when established in conjunction with airway route structures or segments, or from the surface upwards. Unless otherwise specified, Class E Airspace terminates at the base of the overlying airspace. Only aircraft operating under IFR are required to be in contact with air traffic control when operating in Class E airspace.

Georgetown Municipal Airport has airport-specific Class E airspace. Class E transition surfaces cover much of the Georgetown area. This controlled airspace has a floor of 700 feet above the surface.

Several other airports in the area, including Killeen, Lakeway, Taylor, Burnet, and Draughon Miller, are covered by Class E airspace. The airspace around Killeen and Draughon Miller extends from the surface upwards, while the other airports' airspace begins 700 feet above the ground.

### Class G Airspace

Airspace not designated as Class A, B, C, D, or E is considered uncontrolled, or Class G, airspace. Air traffic control does not have the authority or responsibility to exercise control over air traffic within this airspace. Class G airspace lies between the surface and the overlaying Class E airspace (700 to 1,200 feet Above Ground Line (AGL). Additional FAA rules regulate flight altitudes over congested residential areas, National Parks, and outdoor recreational areas, which are often located under Class G airspace. The overall amount of Class G airspace is continuing to decline due to the need for more coordinated air traffic activity.

### Special Use Airspace

Special use airspace is defined as airspace where activities must be confined because of their nature or where limitations are imposed on aircraft not taking part in those activities. There are several Military Operations Areas (MOAs) in the Georgetown Municipal Airport area. These areas are reserved for military use and are designed to separate nonparticipating aircraft from military training operations. The closest MOA to Georgetown is the Gray MOA located 30 miles northwest of the airport. This MOA is in use Monday through Friday, 7:00 a.m. to 7:00 p.m. The airspace from 2,000 feet to FL 180 (18,000 feet) is reserved by the MOA.

There is a multi-level restricted area designated as R-6302A/B/C/D located 27 miles north of Georgetown Municipal Airport. Restrictions in this area are intermittent and are broadcast as a Notice to Airmen (NOTAM) when active. Restrictions can be in effect at varying altitudes from the surface to FL 350 (approximately 35,000 feet MSL). Areas of special use airspace in the vicinity of Georgetown Municipal Airport are depicted on **Exhibit 1D.**

## ENROUTE NAVIGATIONAL AIDS

Enroute navigational aids (NAVAIDS) are established for the purposes of accurate enroute air navigation. Various devices use ground-based transmission facilities and on-board receiving instruments. Enroute NAVAIDS often provide navigation to more than one airport as well as to aircraft traversing the area. Enroute NAVAIDS that operate in the study area are discussed below and depicted on **Exhibit 1D**.

The VOR (Very High Frequency Omnidirectional Range) provides course guidance to aircraft by means of a Very High Frequency (VHF) radio frequency. TACAN (Tactical Air Navigation), primarily a military-oriented facility, is often collocated with a VOR station. TACAN provides both course guidance and line-of-sight distance measurement from an Ultra High Frequency (UHF) transmitter. A properly equipped aircraft translates the VORTAC signals into a visual display of both azimuth and distance. Distance measuring equipment (DME) is also sometimes collocated with VOR facilities. DME emits signals enabling pilots of properly equipped aircraft to determine their line-of-sight distance from the facility. There are four VORTAC facilities offering navigational assistance in the vicinity of Georgetown Muncipal Airport. These include Centex, Lampasas, Waco, and Llano. In addition, the Temple and Gray VOR-DMEs offer navigational assistance to pilots in the vicinity.

VORs define low-altitude (Victor) and high altitude (Jet Routes) airways through the area. Most aircraft enter the Georgetown area via one of these numerous federal airways. Aircraft assigned to altitudes above 18,000 feet MSL use the Jet Route system. Other aircraft use the low altitude airways. Radials off VORs define the centerline of these flight corridors.

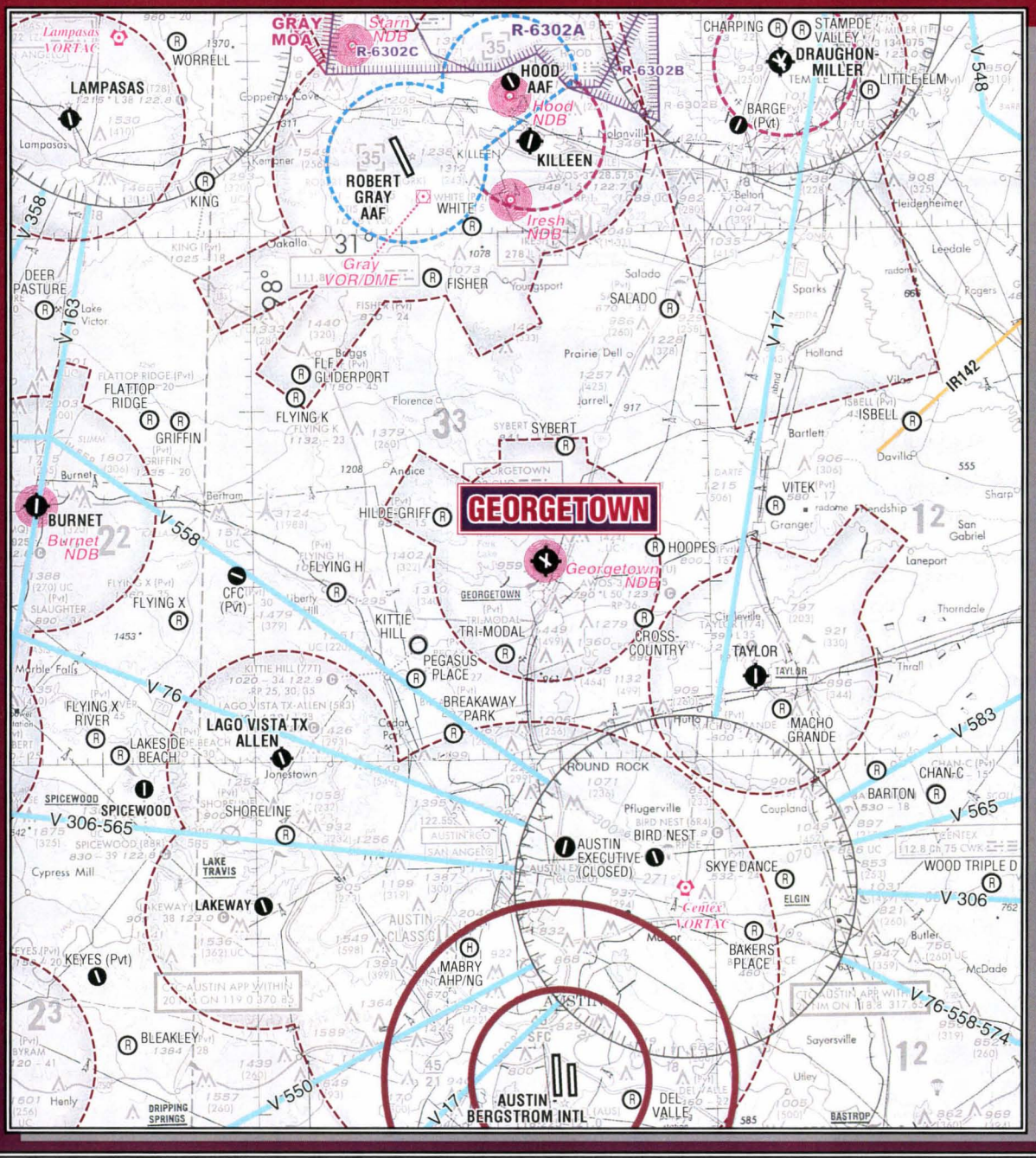
As illustrated on **Exhibit 1D**, there are many Victor Airways in the immediate vicinity of the airport; the two used most near Georgetown are V558 and V17. Additional airways in the region include: V583, V565, V306, V76-558-574, V550, V306-565, V76, and V558, all of which originate from the Centex VORTAC. In addition, there are several Military Training Routes (IR) in the areas surrounding Georgetown Municipal Airport. IR142 is shown northeast of the airport on **Exhibit 1D**.

The non-directional beacon (NDB) transmits non-directional signals whereby the pilot of an aircraft equipped with direction-finding instruments can determine a bearing to or from the radio beacon. In addition to the one located at Georgetown, there are seven NDB facilities in the area: Burnet and Horshoe Bay to the west; Starn, Hood, and Iresh to the north; Lee Co to the southeast; and Garys to the south. Each NDB transmits a continuous two-letter identifier code in International Morse Code.

## AREA AIRPORTS

There are nine public use airports, 34 private, and two military airports within 30 nautical miles (NM) of Georgetown Municipal Airport. The following nine airports are open to the public.

01SP03-1D-5/4/01




**LEGEND:**

- Hard-surfaced runways greater than 8069 ft. or some multiple runways less than 8069 ft.
- Hard-surfaced runways 1500 ft. to 8069 ft.
- Other than hard-surfaced runways
- Services/Fuel Available
- Private (Pvt)
- Heliport
- VORTAC
- Non-Directional Radiobeacon (NDB)
- Compass Rose
- Victor Airways
- Military Training Routes
- Prohibited, Restricted, Warning and Alert Areas
- Military Operations Area (MOA)
- Class C Airspace
- Class D Airspace
- Class E Airspace
- Class E Airspace with floor 700' above surface

Source:
San Antonio Sectional Aeronautical Chart
National Oceanic and Atmospheric Administration (NOAA) Date: Nov 30, 2000

NORTH

0 11
SCALE IN MILES

GEORGETOWN MUNICIPAL AIRPORT

Exhibit 1D
AREA AIRSPACE

**Kittie Hill Airport** (77T), located 8.75 NM west-southwest, is served by three turf runways, the longest being 3,450 feet in length. There are 76 based aircraft and basic services are available.

**Taylor Municipal Airport** (T74) is located 13.8 NM east-southeast and is served by a single asphalt runway 3,498 feet in length. A project is currently underway to extend the runway to 4,000 feet and widen it to 75 feet. There are 31 based aircraft and basic services are available.

**Bird's Nest Airport** (6R4), located 17.9 NM south-southeast, has a 2,722-foot paved runway and a 2,500-foot turf runway. There are 27 aircraft based at the field and no services are available.

**Rusty Allen / Logo Vista Airport** (5R3), situated 18.5 NM southwest, is served by Runway 15-33 which is 808 feet in length. There are 63 based aircraft and full services are available.

**Killeen Municipal Airport** (ILE), located 24.4 NM north, provides a 5,495-foot asphalt runway and two helipads. There are 54 based aircraft and basic services are available.

**Lakeway Airpark Airport** (3R9), located 25.2 NM southwest, is served by Runway 16-34. This 3,865-foot asphalt runway is limited to aircraft 12,500 pounds or less. There are 45 based aircraft and basic services are available.

**Spicewood Airport** (88R) is 25.8 NM west-southwest and served by a 3,900-foot paved runway. There are 30 based aircraft and maintenance services are available.

**Austin-Bergstrom International Airport** (AUS), located 29.1 NM south, is a commercial service airport with parallel concrete runways, the longer being 12,251 feet in length. There are 194 aircraft based at the airport and a large variety of services are available.

**Burnet Municipal Airport** (BMQ) is located 29.1 NM west. A single 5,000-foot asphalt runway serves the airport. There are currently 55 based aircraft at Burnett and basic general aviation services are available.

**Exhibit 1D** illustrates the location of these and other area airports.

## INSTRUMENT APPROACHES

Instrument approaches are defined using electronic and visual navigational aids to assist pilots in landing when visibility is reduced below specified minimums. While these are especially helpful during poor weather, they often are used by commercial pilots when visibility is good. Instrument approaches are classified as precision and nonprecision. Both provide runway alignment and course guidance, while precision approaches also provide glide slope information for the descent to the runway. Georgetown Municipal Airport has five nonprecision approaches and no precision approaches.

### Nonprecision Approaches

A Global Positioning System (GPS) nonprecision approach is available for all runways at Georgetown Municipal Airport. GPS circling approaches serve