
A INVENTORY OF EXISTING CONDITIONS

INTRODUCTION. Will Rogers World Airport is located in Oklahoma City, Oklahoma and is the busiest commercial service airport in the State of Oklahoma. The Airport accommodates all aviation types, from large commercial service, air cargo, and military aircraft, to the smallest single engine general aviation aircraft. It is recognized as a critical component of the regional and national transportation systems, as well as an important element in the transportation infrastructure of the Oklahoma City metropolitan area.

Oklahoma City is the state capital and is the thriving hub of central Oklahoma – an economic region alive with progress and vitality. The metropolitan area encompasses an economy made up of over one million people.

The most recent master planning effort for Will Rogers World Airport was completed in 1992. Since that time, many changes have transpired on a local, regional, and national level that have influenced and will continue to influence the aviation facilities and services provided at the Airport. These changes, coupled with the continued population growth and economic expansion occurring within the region, necessitate a re-evaluation of the Airport's current and forecast operational characteristics and facilities, as well as updating the goals, objectives, and assumptions that will guide future airport development.

The purpose of this Master Plan Update is to determine the long-range airport development needs, examine viable and reasonable alternatives, recommend a realistic plan, and identify potential environmental considerations. The requirement for future facilities will be evaluated from an aviation use standpoint, along with consideration of the relationship of airport facilities to the surrounding land uses and the community as a whole. The focus of this study is the total aviation facility and its environs. The overall planning goal is the development of an aviation facility that can accommodate future demand, is not significantly constrained by its environs, and has minimal adverse effects on its surroundings.



Airport Facilities

As illustrated in the following figures, entitled *AIRPORT LOCATION MAP* and *AIRPORT VICINITY MAP*, Will Rogers World Airport is located in central Oklahoma, approximately six miles southwest of downtown Oklahoma City, in Oklahoma and Cleveland Counties. The Airport Reference Point (ARP) is located at Latitude 35° 23' 35.12" N, and Longitude 97° 36' 02.64" W. Will Rogers World Airport, classified as a small-hub, primary commercial service airport by the Federal Aviation Administration's (FAA) National Plan of Integrated Airport Systems (NPIAS), has an elevation of 1,295 feet above mean sea level (AMSL) and property consisting of approximately 8,081 acres.

As of August 2007, the Airport is served by 14 airlines: American, American Eagle, Champion Air, Continental, Delta, Delta Connection (ASA & Comair), ExpressJet, Frontier, Northwest, Southwest, United, United Express, and US Airways. Combined, these airlines provide non-stop flights to 24 domestic cities and two international cities. The domestic cities include: Albuquerque, New Mexico; Atlanta, Georgia; Austin, Texas; Baltimore, Maryland; Chicago, Illinois; Cincinnati, Ohio; Cleveland, Ohio; Dallas/Fort Worth (Love and DFW), Texas; Denver, Colorado; Detroit, Michigan; Houston (Hobby and Bush/Intercontinental), Texas; Kansas City, Missouri; Las Vegas, Nevada; Los Angeles (International and Ontario), California; Memphis, Tennessee; Minneapolis, Minnesota; Newark, New Jersey; Phoenix, Arizona; Sacramento, California; Salt Lake City, Utah; San Antonio, Texas; San Diego, California; St. Louis, Missouri; and Washington, D.C. The international cities served with non-stop flights are Puerto Vallarta and Cancun, Mexico.

Will Rogers World Airport is operated with four runways (Runway 17R/35L, Runway 17L/35R, Runway 13/31, and Runway 18/36), parallel taxiway systems serving each of those runways, a variety of aircraft parking aprons, a passenger terminal complex, air cargo facilities, general aviation hangars and related facilities, and support facilities [Airport Traffic Control Tower (ATCT), Aircraft Rescue and Fire Fighting (ARFF) facility, airport maintenance facilities, etc]. The figure entitled *EXISTING AIRPORT LAYOUT* provides a graphic presentation of the existing airport facilities.



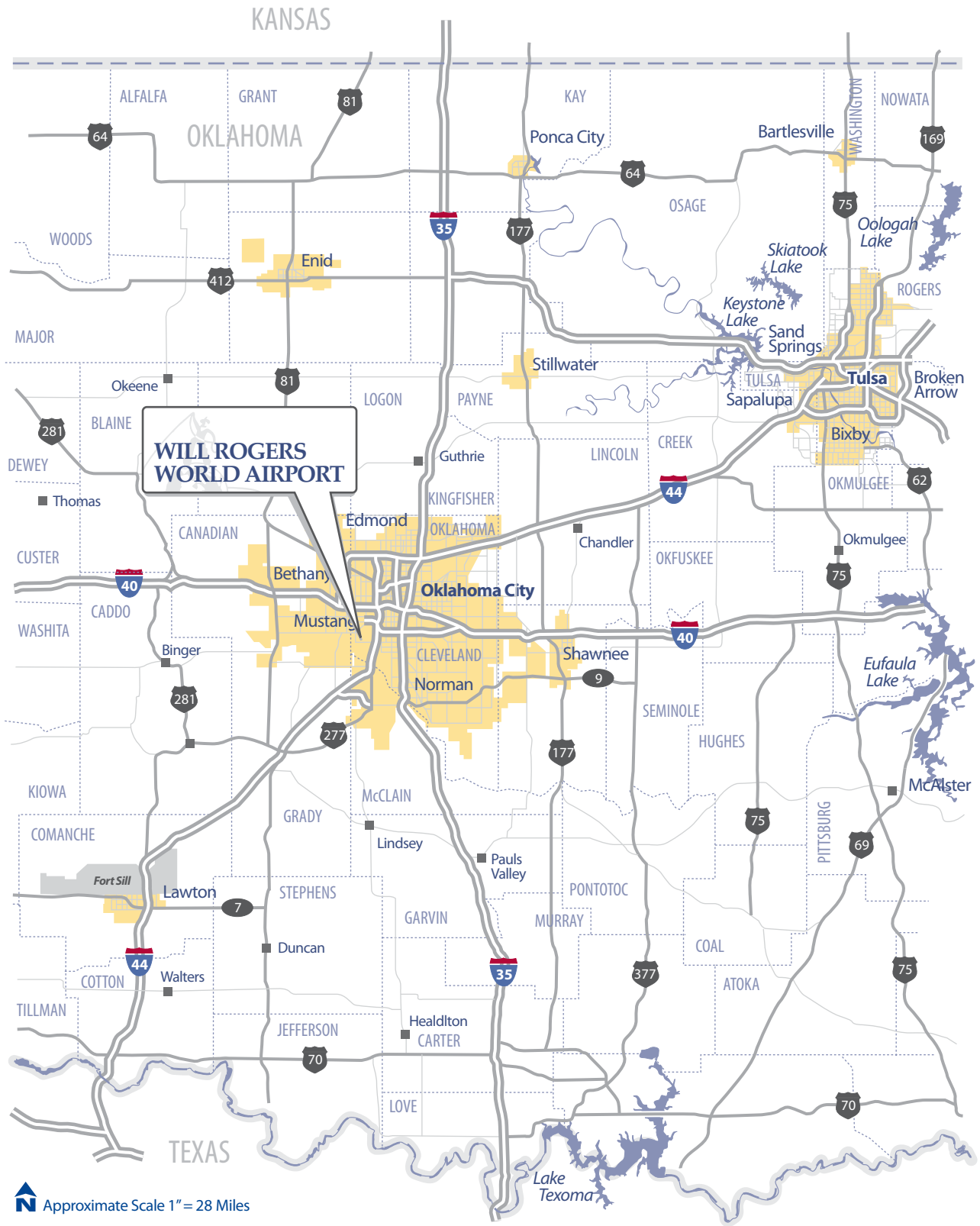
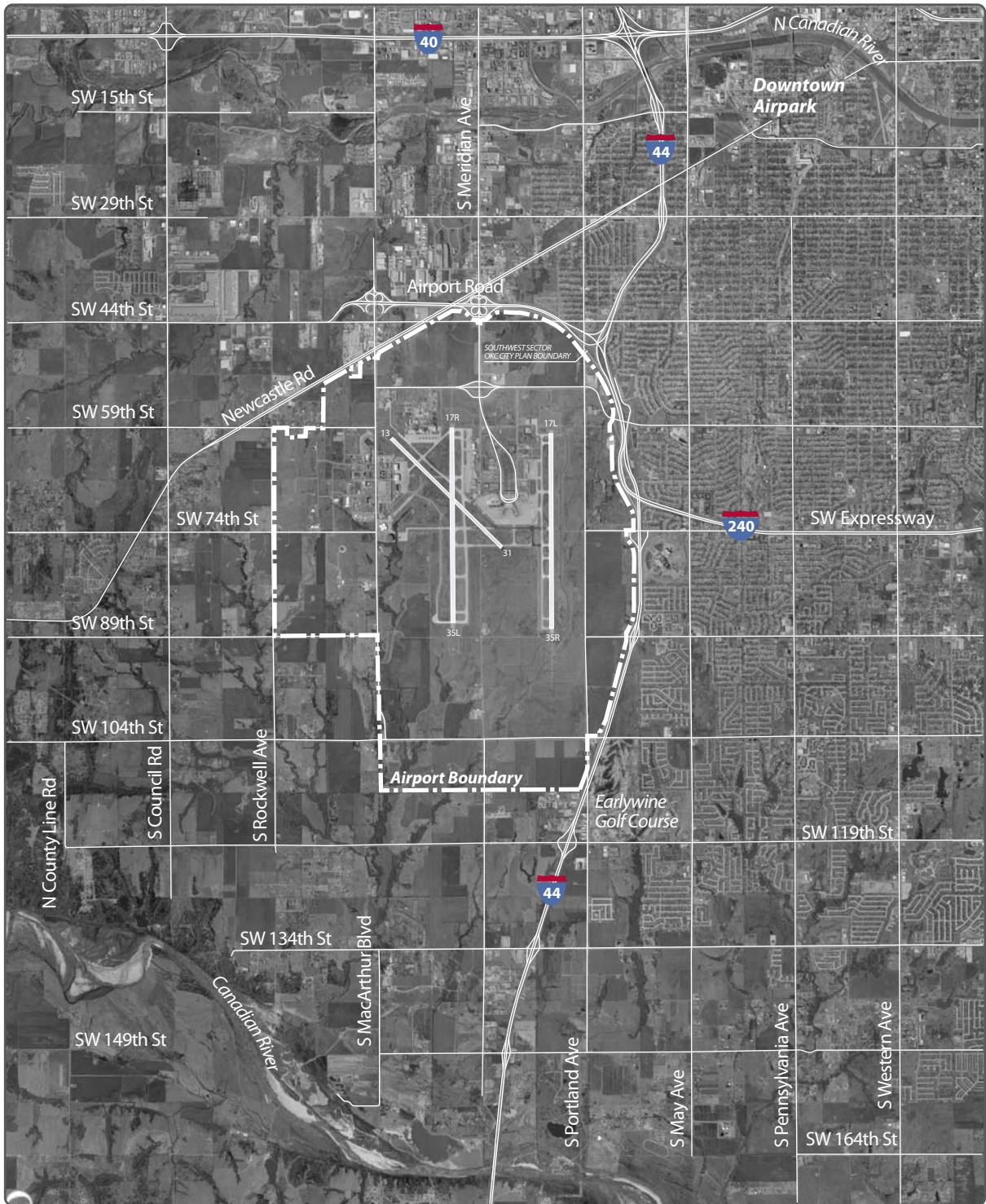


Figure A1 Airport Location Map

Source: Yahoo Maps 2007.



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 Approximate Scale 1" = 7000'

Figure A2 **Airport Vicinity Map**

Source: Google Maps 2007.



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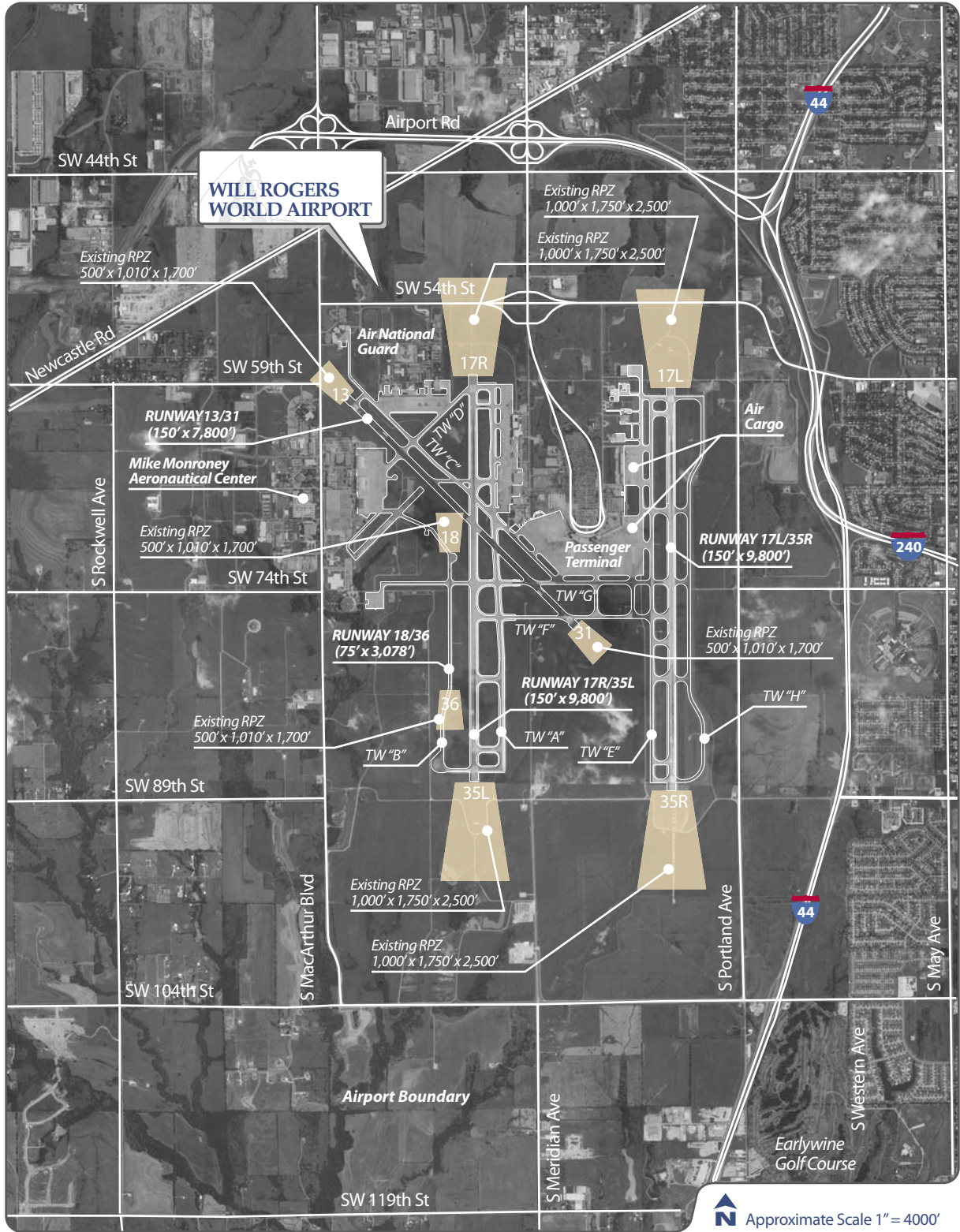


Figure A3 Existing Airport Layout



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Airside Facilities

Runways. Runway 17L/35R is 9,802 feet in length and 150 feet in width, is constructed of concrete, and has a gross weight bearing capacity of 50,000 pounds single wheel, 200,000 pounds dual wheel, and 400,000 pounds dual tandem wheel main landing gear configuration. The runway is equipped with High Intensity Runway Lights (HIRL) and Centerline Lights (CL), while Touchdown Zone Lights are provided on Runway 35R. Instrument Landing Systems (ILS) composed of localizer and glide slope antennas, along with approach lighting systems [Medium Intensity Approach Lighting System with Runway Alignment Indicator Lights (MALSR) serve Runway 17L, High Intensity Approach Lighting System with Sequenced Flashing Lights, Category II Configuration (ALSF2) serve Runway 35R], provide the precision instrument approach capabilities for this runway.

Runway 17R/35L is 9,800 feet in length and 150 feet in width, is constructed of concrete, and also has a gross weight bearing capacity of 50,000 pounds single wheel, 200,000 pounds dual wheel, and 400,000 pounds dual tandem wheel main landing gear configuration. This runway is equipped with HIRL and four-light Precision Approach Path Indicator (PAPI) lights on Runway 17R. Both runway ends have full ILS systems (localizer and glide slope antennas, along with MALSR) that provide precision instrument approach capabilities.

Runway 13/31 is 7,800 feet in length and 150 feet in width, is constructed of asphalt, and has a gross weight bearing capacity of 50,000 pounds single wheel, 200,000 pounds dual wheel, and 400,000 pounds dual tandem wheel main landing gear configuration. This runway is equipped with Medium Intensity Runway Lights (MIRL), four-light Visual Approach Slope Indicator (VASI-4) lights, and Runway End Identifier Lights (REILS) on both runway ends.

Runway 18/36 is 3,078 feet in length and 75 feet in width, is constructed of asphalt, and has a gross weight bearing capacity of 50,000 pounds single wheel, 150,000 pounds dual wheel, and 240,000 pounds dual tandem wheel main landing gear configuration. This runway functions as Taxiway B when not in use as a runway.

Taxiways. Numerous taxiways provide access from the runways to the various landside aircraft use areas. The major taxiways include:

- **Taxiway A – the parallel taxiway on the east side of Runway 17R/35L, 75 feet in width;**
- **Taxiway E – the parallel taxiway on the west side of Runway 17L/35R, 75 feet in width;**
- **Taxiway H – the parallel taxiway on the east side of Runway 17L/35R, 75 feet in width;**



- **Taxiway B – the partial parallel taxiway on the west side of Runway 17R/35L, 75 feet in width (also functions as Runway 18/36);**
- **Taxiway C – the partial parallel taxiway on the northeast side of Runway 13/31, 75 feet in width;**
- **Taxiway D connects the Runway 17R threshold with Taxiway C, near the northwest end of Runway 13/31, 75 feet in width;**
- **Taxiways F and G are midfield taxiways connecting Runways 17L/35R and 17R/35L just south of the terminal apron, 75 feet in width; and,**
- **Taxiways J and K connect the terminal apron with Taxiways F and G, 75 feet in width.**

Landside Facilities

Landside facilities are defined as those airport facilities that are outside of the runway/taxiway system. Thus, landside facilities include the passenger terminal building, passenger terminal support facilities, airport support facilities, aircraft storage and maintenance hangars, Fixed Base Operator (FBO) facilities, aircraft storage and parking aprons, along with automobile access and parking facilities, and other on-airport structures/use areas. At an airport with the size and complexity of Will Rogers World Airport, a listing/description of major landside facilities is an important element of the inventory process and is provided in the following narrative.

Building and Aircraft Apron Development Areas. There are five primary aircraft parking aprons at Will Rogers World Airport that have associated structural development.

Passenger Terminal. The recently renovated terminal building, consisting of a central terminal and a west concourse, totals approximately 600,000 square feet and is located north of, and adjacent to, the terminal apron between the parallel runways. Facilities located in the four-story terminal building include airline ticket counters and offices, baggage claim, passenger departure lounges, rental car offices and counters, security checkpoints, Transportation Security Agency (TSA) offices, and concession space, along with the Oklahoma City Department of Airports administrative offices and meeting rooms.

The second level of the central terminal has six passenger departure gates. The 666-foot long west concourse has 11 departure gates. Southwest Airlines utilizes three of the gate areas, Delta/Champion Air use three, American/US Airways utilize two, United utilizes two, and Continental uses two, while Northwest, Express Jet, and Frontier occupy one each. Two of the departure gates are unused at the present time, although one is reserved as an airport gate.



The passenger terminal aircraft parking apron is located on the south side of the terminal building. This apron area is comprised of approximately 50 acres of pavement. The northeast part of the apron is reserved for the handling of air cargo shipped in the belly compartments of air carrier aircraft that utilize the Air Cargo Building located at the east end of the central terminal.

Terminal Drive circles through the passenger terminal area and connects with Meridian Avenue about one mile north of the terminal building. Meridian Avenue provides access to Airport Road approximately one mile further to the north, which in turn provides a connection with Interstate 44 roughly one and one-half miles to the east.

There are several automobile parking areas in the direct vicinity of the terminal building, including:

- **North Lot – 2,760 parking spaces.**
- **West Lot – 519 parking spaces.**
- **Lot 1 – 1,304 parking spaces.**
- **Garage – 1,662 parking spaces, including 282 hourly parking spaces and 290 rental car spaces.**
- **Employee Lot – 432 parking spaces.**

It should be noted that a new five-story parking structure is currently being constructed, and the existing parking garage at Will Rogers World Airport is planned for renovation.

Air Cargo. The air cargo facilities are located east and northeast of the passenger terminal building. The Airport currently has three cargo buildings that are used for various activities related to air freight operations. The air cargo building, located at the east end of the central terminal, is used for the loading and unloading of belly freight carried by the passenger airlines. The cargo annex building is located just north of the northeast end of the air cargo building and west of Taxiway E. Half of this building is utilized by the Airport Operations staff; the remaining half is used by a speculative air cargo venture. The Aeroterm building, located north of the cargo annex building, is a tenant-leased facility used exclusively by the all-cargo air carriers.

An exclusive air cargo apron is located north of the terminal apron and west of Taxiway E, adjacent to the Aeroterm building that contains approximately six acres (270,200 square feet) of leased paved area. Approximately four acres (170,955 square feet) of the terminal apron that is



located directly east of the cargo annex building are available for lease by the air cargo airlines/handlers.

General Aviation. The general aviation aircraft facilities are located west of Meridian Avenue, northwest of the terminal building, and east of Taxiway A. Operations in this area generally consist of FBOs and maintenance facilities. The general aviation apron varies in width from 250 feet to 400 feet, with the southern portion being wider than the northern portion. It is approximately 3,200 feet in length, extending from the end of Runway 17R to the intersection of Taxiways A and C. Overall, about 20 acres of pavement are provided for general aviation aircraft.

Air National Guard. The Air National Guard (ANG) facilities are located west of Runway 17R/35L and north of Runway 13/31. The 137th Airlift Wing had been based there until a recent Base Realignment and Closure (BRAC) decision to reassign the C-130 aircraft previously flown by the 137th Airlift Wing and transition to KC-135 tanker aircraft, which will now be based at Tinker Air Force Base (AFB). The entire ANG facilities cover roughly 133 acres, with some 15 acres being used for aircraft parking apron.

Mike Monroney Aeronautical Center. Located on over 1,000 acres in the western portion of airport property southwest of Runway 13/31, the Mike Monroney Aeronautical Center is the centralized service and support facility for the FAA and the Department of Transportation (DOT). The Center has over 5,500 federal and contract workers and an operational budget of over \$1 billion annually. Apron space provided at the Center equals approximately 14 acres.

Other Aircraft Parking Apron Areas. There are four apron areas on the Airport that are primarily utilized by single tenants. The Federal Bureau of Prisons operates a Federal Transfer Center, located at the west end of Taxiway G and south of the Mike Monroney Aeronautical Center, serving as a processing and transfer center for federal prisoners. Approximately 4.5 acres of apron are located east of the Transfer Center.

The U.S. Marshals Service Air Wing operates a facility at the north end of Runway 17L/35R, with airside access provided by Taxiway E-1. The U.S. Marshals Service bases its fleet of aircraft at the Airport to support transportation and transfer of federal prisoners. The apron space provided here equals just less than two acres.

Metro Technology Center's Aviation Career Campus is located in the northwestern portion of airport property, directly north of the approach end of Runway 13. Airside access is provided by



Taxiway C-2 and landside access is by way of MacArthur Boulevard or S.W. 54th Street. The Campus provides aircraft maintenance technician training through classrooms, labs, and two separate hangars. An approximate 2.2-acre apron serves this facility.

ARINC has an aircraft maintenance and modification hangar, with adjacent apron, located east of Runway 17L/35R at the north end of Taxiway H. The apron consists of approximately five acres.

Airport Support Facilities

Fuel Storage Facilities. The Airport's main fuel storage facility is located west of Meridian Avenue, just south of Amelia Earhart Drive and east of the approach end of Runway 17R. The facility consists of three 210,000-gallon Jet-A tanks, one 15,000-gallon 100LL AVGAS tank, one 12,000-gallon unleaded tank, and one 12,000-gallon diesel tank. Aircraft fueling is conducted on the aprons by refueling trucks.

Aircraft Rescue and Fire Fighting (ARFF) Facility. The ARFF facility is located northeast of the intersection of Runways 13/31 and 17R/35L, directly west of the passenger terminal. Direct access to the airfield is provided by way of Taxiway C. Will Rogers World Airport maintains a Federal Aviation Regulation (FAR) Part 139 Index C classification.

Airport Traffic Control Tower (ATCT). The federal ATCT facility is located west of the terminal building, just north of the west side of the terminal apron. This control tower is open 24 hours a day, seven days a week.

Airport Maintenance. The Airport's maintenance facilities are currently located in the southern portion of the Airport, just north of S.W. 104th Street.

Other Airport Facilities

Rental Car Maintenance Facilities. There are six rental car companies presently operating on airport property (i.e., Avis, Budget, Hertz, Enterprise, Dollar, and Thrifty) and one operating off airport property (i.e., Alamo/National). Four of these companies utilize vehicle maintenance/storage facilities at the Airport. These facilities are located north of the terminal building and west of Terminal Drive.



Southwest Airlines Reservation Center. Southwest Airlines maintains a reservations center at Will Rogers World Airport. The center is located at the northeast corner of S.W. 54th Street and Meridian Avenue, in the northern portion of airport property.

U.S. Customs and Border Protection - National Air Training Center. The U.S. Customs and Border Protection operates their National Air Training Center at the Airport, which provides centralized training and standardization for Customs aircraft operations. This facility is located north of the Southwest Airlines Reservation Center, east of Meridian Avenue and north of S.W. 54th Street.

U.S. Customs and Border Protection Office of Air and Marine Operations. The U.S. Customs and Border Protection Office of Air and Marine Operations maintains a hangar located north of the U.S. Marshals Service Air Wing hangar. It supports the National Air Training Center by housing aircraft and personnel for training and maintenance.

U.S. Postal Service National Center for Employee Development. The U.S. Postal Service operates the National Center for Employee Development at the Airport, which is located east of the terminal building, east of Terminal Drive.

U.S. Postal Service Distribution Center. A U.S. Postal Service Distribution Center is located on the east side of airport property, west of Interstate 44 and east of Portland Avenue.

Airport Hotel. A Sheraton Hotel is located at the Airport, just north of the terminal building, east of Terminal Drive and west of Air Cargo Road.

Airport Environs

Will Rogers World Airport is located entirely within the city limits of Oklahoma City. Because the Airport has an influence on, and is influenced by, the surrounding land uses, a proper inventory of the existing land uses, zoning patterns, and future land use proposals (comprehensive planning recommendations) is an important element in the airport planning process. Land use compatibility with airport development can be improved with a thorough knowledge of what land uses exist, what land uses are proposed and, what, if any, changes can be made.



Existing Land Use

Will Rogers World Airport is located in the southwest portion of the city limits of Oklahoma City. The following illustration, entitled *GENERALIZED EXISTING LAND USE*, provides a graphic representation of the existing land use types in the vicinity of the Airport.

North of the Airport (between airport property and Airport Road, east of MacArthur Boulevard) is comprised of primarily single-family residential uses with some commercial development. West of MacArthur Boulevard and north of South Newcastle Road, industrial land use is predominant. South of South Newcastle Road, west of the Airport, and east of Rockwell Avenue, single-family and large lot residential development are the dominant land uses, with some scattered commercial and industrial land uses. North of Airport Road is dominated by industrial and commercial development, with some single-family residential and duplex/townhouse development occurring north of S.W. 29th Street.

To the east of the Airport, east of Interstate 44, single-family residential development dominates with commercial development occurring adjacent to, and at the intersections of, major arterial streets. Institutional land use, associated with the Oklahoma City Community College, occurs southwest of the South May Avenue and S.W. 74th Street intersection.

The majority of land south of the Airport, between Meridian Avenue and Interstate 44, is mostly undeveloped, with some industrial, commercial, and open space and recreation land uses. West of Meridian Avenue, industrial, large lot residential, and mining land uses are scattered throughout vast amounts of undeveloped land. South of the Airport and east of Interstate 44 is dominated by residential development or open space and recreation use (i.e., Earlywine Golf Course).

West of the Airport, land uses include single-family residential and commercial adjacent to South Newcastle Road, some industrial development, and large lot residential. Duplex/townhouse development occurs west of Council Road and south of S.W. 74th Street. The remainder of the area is either undeveloped or developed as large lot residential.



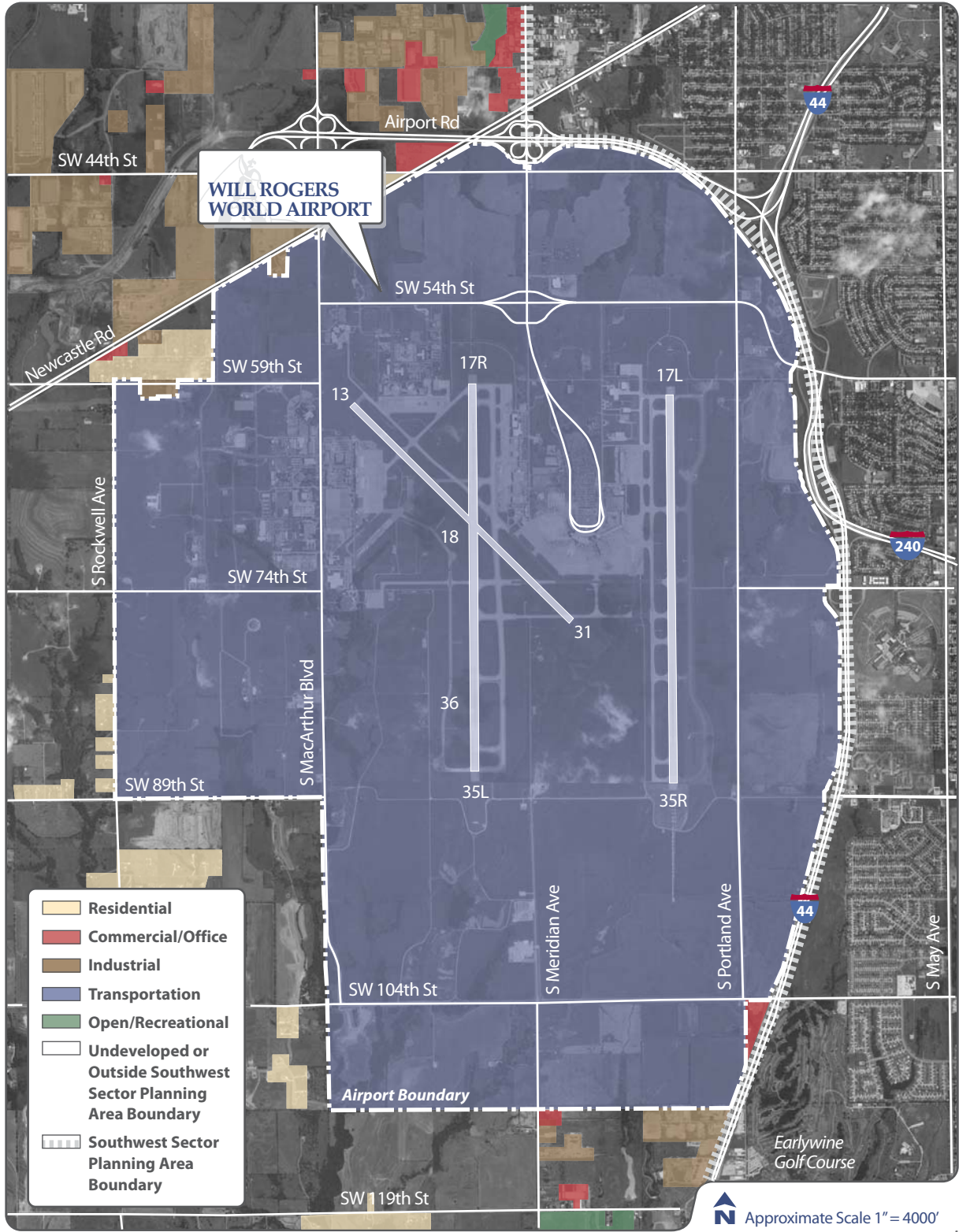


Figure A4 **Generalized Existing Land Use**

Source: Base Map: Google Maps 2007.
 Generalized Existing Land Use: City of Oklahoma City,
 Southwest Sector Plan, 2000-2020.



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Zoning

The City of Oklahoma City utilizes zoning to control land uses within its corporate boundary. The following figure, entitled *GENERALIZED EXISTING ZONING*, reflects the land use zoning designations for the area surrounding the Airport. The map was developed with data provided by the *Southwest Sector Plan*, adopted March 23, 2006, which is an amendment to the *OKC Plan, 2000-2020*.

The area surrounding the Airport is predominantly zoned for industrial use. The majority of land from Airport Road on the north, Interstate 44 to the east, S.W. 149th Street on the south, and Rockwell Avenue on the west is zoned industrial. Exceptions include the commercial zoning designation of the Sheraton Hotel site on airport property, the residential planned unit development of a sizeable portion of land between S.W. 119th Street and S.W. 134th Street west of Interstate 44, and the agricultural zoning of most of the section south and west of S.W. 89th Street and MacArthur Boulevard. Additionally, some residential and commercial zoning designations are applied to the existing neighborhood located northwest of South Newcastle Road, south of Airport Road, and east and west of MacArthur Boulevard.

Additionally, the City of Oklahoma City has established Airport Zoning Overlay Districts that limit both the height and types of development within the area surrounding the Airport. The purpose of the Airport Zoning Overlay Districts is to:

- **Promote public health, safety, and general welfare of the City;**
- **Prevent the creation of airport hazards, which are public nuisances and an injury to the region served by the airport;**
- **Protect the City and the utilization of the airports against potential litigation; and,**
- **Reduce the adverse impact of airports on surrounding properties.**

It should be noted that the Airport Zoning Overlay Districts were implemented in the early 1980s for Oklahoma City's three municipally-operated airports and the area surrounding Tinker Air Force Base (AFB), following the preparation of the *Oklahoma City Airports Land Use & Zoning Report & Ordinances*. These overlay zoning guidelines are specified within Chapter 59 of the Planning and Zoning Code, Article XIII. Zoning Overlay Districts, §59-13150 Airport Zoning Overlay Districts, which is included in Appendix One.

Existing Oklahoma City airport zoning regulations for Will Rogers World Airport are made up of two components: 1) an Airport Zone related to height restrictions, which is reflected on an



Airport Height Zoning Map, and 2) an Airport Environs Zone Map that regulates land use within the vicinity of the Airport.



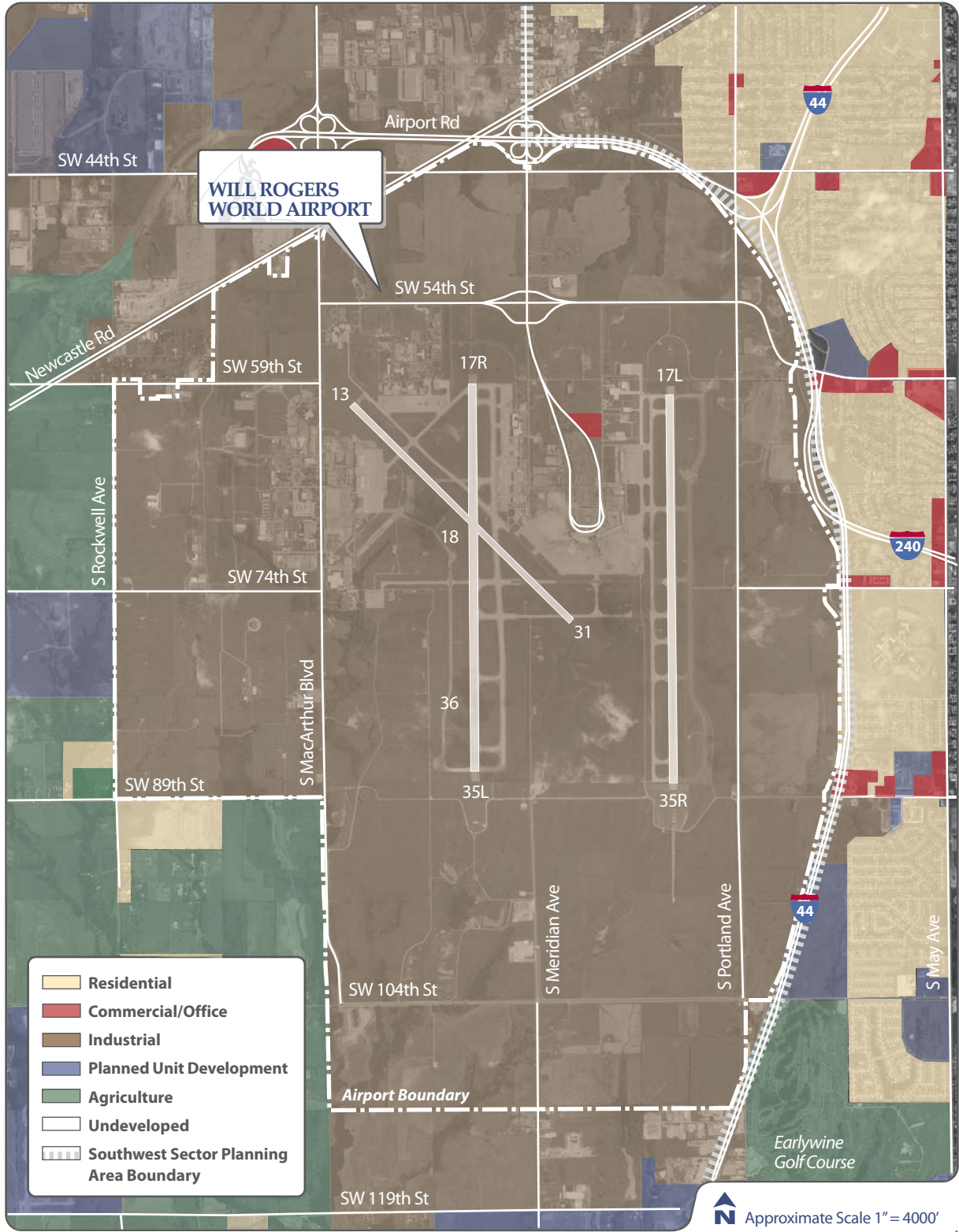


Figure A5 Generalized Existing Zoning

Source: Base Map: Google Maps 2007.
 Generalized Existing Land Use: City of Oklahoma City,
 Southwest Sector Plan, 2000-2020. City of Oklahoma City
 Zoning Online Locator, October 2007.



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The *Airport Environs Zone Map* for Will Rogers World Airport, presented on the following illustration entitled *AIRPORT ENVIRONS OVERLAY ZONING MAP*, consists of two zones [i.e., the *Airport Environs Zone One (AE-1)* and the *Airport Environs Zone Two (AE-2)*]. The AE-1 boundary is defined by existing airport property and that portion of the 65 Day-Night Average Sound Level (LDN)¹ noise contour that extends beyond existing airport property. The AE-2 boundary is defined by the limits of that portion of the 60 LDN noise contour extending beyond airport property.

As specified by the City of Oklahoma City Planning and Zoning Code, the two zones are listed as having the following regulations:

- *Airport Environs Zone One (AE-1)*: The AE-1 regulations include: 1) Certain land uses (such as agricultural, airport property and related uses, industrial uses, wholesale and retail commercial uses, and areas zoned for open space or recreational uses) are deemed compatible and, therefore, shall be exempted from the provisions of Division 4 of Article II of Chapter 12 of the Oklahoma City Municipal Code. 2) Other uses allowed within the AE-1 Zone shall meet or exceed building code requirements for a minimum noise level reduction of thirty (30) decibels inside the structure as set forth in Division 4 of Article II of Chapter 12 of the Oklahoma City Municipal Code. 3) All uses allowed within this zone shall grant an avigation easement right as a condition of subdivision or building permit approval, except as otherwise provided herein. Said avigation easement right shall be granted to the Oklahoma City Airport Trust for uses within the AE-1 Zones for Will Rogers World Airport. 4) Single-family or two-family residential uses, and institutional uses such as schools, community centers, churches, etc., are prohibited in this zone.

Airport Environs Zone Two (AE-2): The AE-2 regulations include: 1) Certain land uses (such as agricultural, airport property and related uses, industrial uses, wholesale and retail commercial uses, and areas zoned for open space or recreational uses) are deemed compatible and, therefore, shall be exempted from the provisions of Division 4 of Article II of Chapter 12 of the Oklahoma City Municipal Code. 2) Other uses allowed within the AE-2 Zone shall meet or exceed building code requirements for a minimum noise level reduction of twenty-five (25) decibels inside the structure as set forth in Division 4 of Article II of Chapter 12 of the Oklahoma City Municipal Code. 3) All uses allowed within this zone shall grant an avigation easement right as a condition of subdivision or building permit approval, except as otherwise provided herein.

¹ The LDN acronym for Day-Night Average Sound Level has since been revised to DNL.



Said aviation easement right shall be granted to the Oklahoma City Airport Trust for uses within the AE-2 Zones for Will Rogers World Airport. It should be noted that Aviation Easements submitted in conjunction with development located within AE-1 and AE-2 Zones shall conform to the provisions contained within the Oklahoma City Airports Model Aviation Easement.



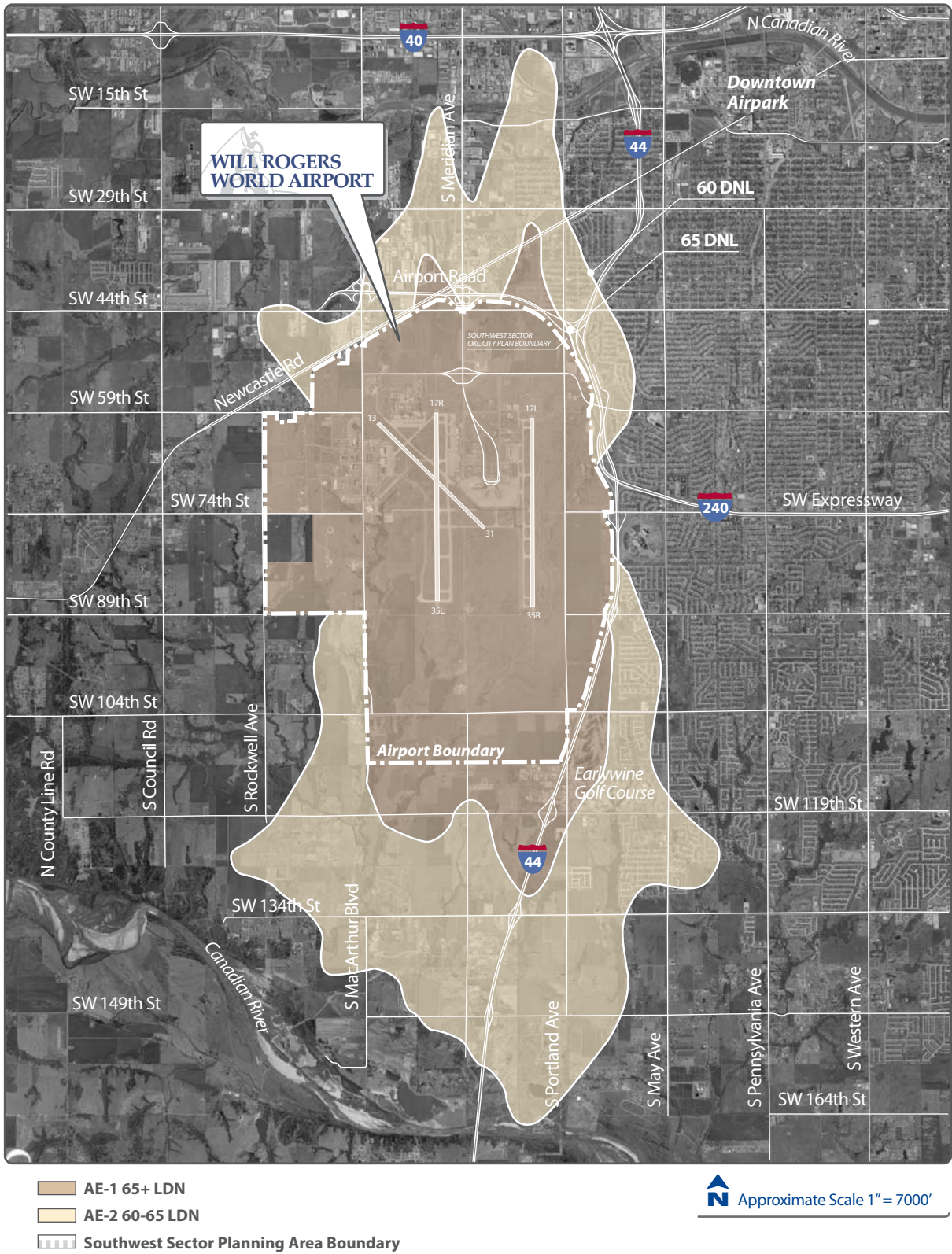


Figure A6 **Airport Overlay Zoning Map**

Source: Base Map: Google Maps 2007.
 Zoning Overlay Districts: City of Oklahoma City, Planning and Zoning Code.



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Future Land Use Planning

The future land uses for the area surrounding the Airport are illustrated in the following figure entitled *GENERALIZED FUTURE LAND USE*. The source of information is the *Southwest Sector Plan*, an amendment to the *OKC Plan, 2000-2020*. The plan reflects the community's land use decision making process by providing future growth and development guidance. The plan outlines the long-term future development pattern and sets the land use and development policy to guide day-to-day development review decisions. Additionally, it is an important and effective tool to help manage the growth of communities within the Oklahoma City Metropolitan Area.

The predominant future land use designation for the Airport and surrounding properties is Industrial. This designation covers an area from the North Canadian River in the north to S.W. 149th Street in the south, and from Interstate 44 in the east to MacArthur Boulevard in the west. To the west/northwest of the Airport, the Industrial designation continues west past MacArthur Boulevard to Council Road and beyond. However, within this Industrial designation, there are areas zoned for residential development.

Industrial land uses are areas designed to facilitate high quality industrial development that brings about significant public benefits including expanded employment opportunities through targeted extension of public utilities and transportation services. The development should be compatible with surrounding properties and adverse impacts such as traffic volumes, noise, dust, fumes, proliferation in the number and size of signs, and unsightly appearance on surrounding properties should be minimized.

Southwest of the Airport, an Urban Growth designation is applied to the area west of MacArthur Boulevard to County Line Road. This designation is applied to areas designed to provide an appropriate mix and pattern of residential development that promotes a sense of neighborhood and livability, is effectively integrated with surrounding development, allows for efficient vehicular and pedestrian access, efficiently utilizes available public services, and maintains property values. Within this area, there is a Policy Area One designation that allows the transition from its present rural character to urban development concurrent with the construction of the proposed West Outer Loop. However, new industrial development is prohibited, but it does allow urban residential and commercial development of portions of the designated industrial area adjacent to the urban growth area, provided protective measures are applied within the proposed urban development when adjoining existing industrial uses. These protective measures could include screening, greenbelts, and extra setbacks. East of Interstate 44, which is outside the *Southwest Sector Plan*, the predominant designation is Urban Development. This designation includes areas of more recent and on-going development that



are served by the three basic urban services – public provided water supply, sewage treatment, and fire protection, or where such services will be made available. To the southeast of the Airport, east of Interstate 44, Major Open Space is applied to the Earlywine Golf Course, and Industrial designations occur in the area south of S.W. 119th Street and north of S.W. 164th Street.

The plan designates two Potential Regional Centers within the vicinity of the Airport and both are associated with the proposed West Outer Loop. One is located at the intersection of the West Outer Loop and the extension of Airport Road near Rockwell Avenue, between S.W. 44th Street and S.W. 59th Street. The other is located at the intersection of West Outer Loop with Interstate 44, near S.W. 149th Street and Meridian Avenue. Regional Commercial Centers are designated areas allowing commercial development that is appropriate to an urban context, enhances community appearance, is limited to uses providing neighborhood services, and is scaled to serve the needs of residents in adjacent areas. Special protections along the boundaries with adjoining residential development may be required that could include greenbelts, extra setbacks, step-down intensities, height limitations, sign restrictions, and specification of building materials.



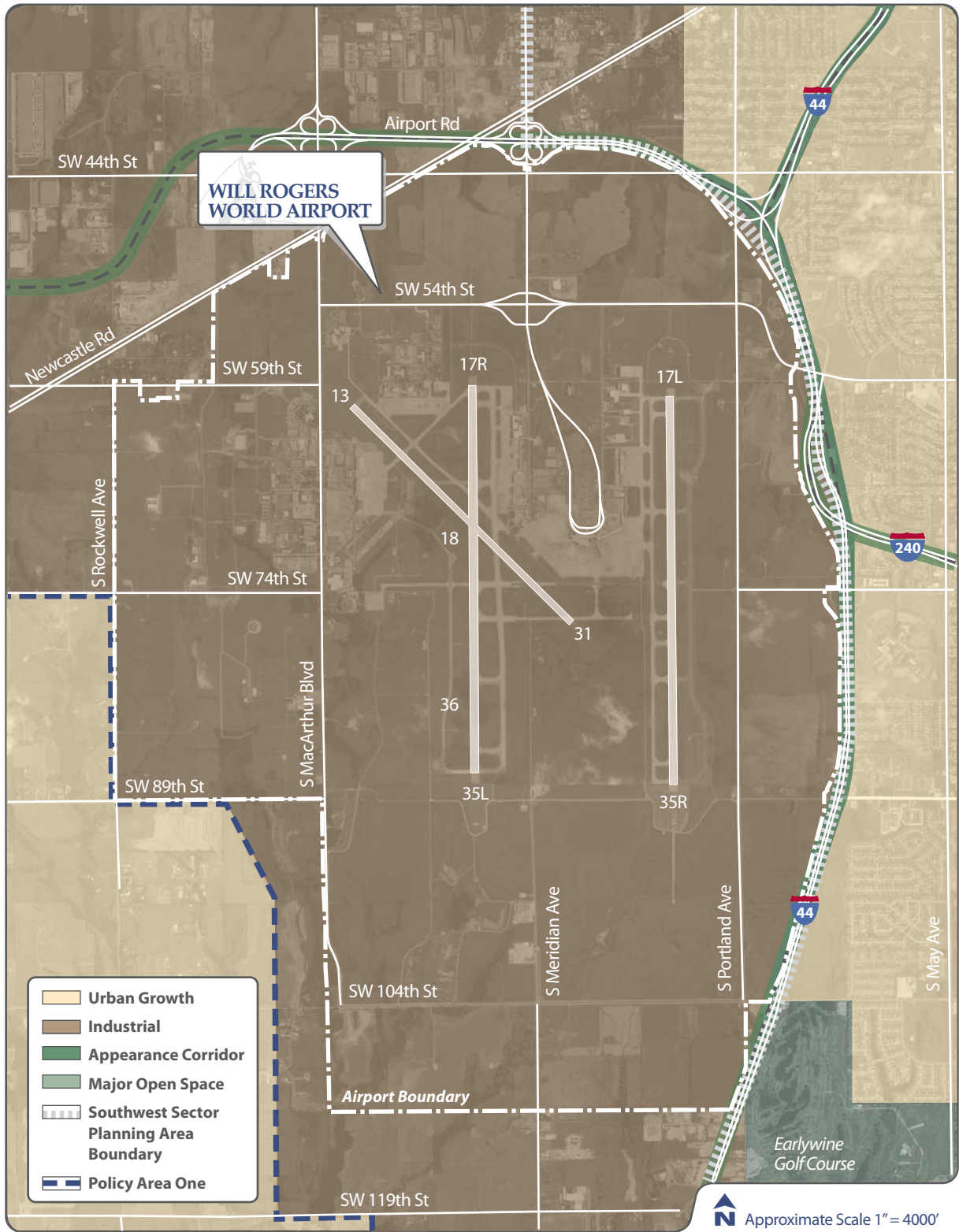


Figure A7 **Generalized Future Land Use**

Source: Base Map: Google Maps 2007.
 Generalized Future Land Use: City of Oklahoma City,
 Southwest Sector Plan, 2000-2020.



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Airspace System/Navigation and Communication Aids

As with all airports, Will Rogers World Airport functions within the local, regional, and national system of airports and airspace. The following narrative gives a brief description of the Airport's role as an element within these systems.

Air Traffic Service Areas and Aviation Communications

Within the continental United States, there are some 22 geographic areas that are under Air Traffic Control (ATC) jurisdiction. Within each area, air traffic controllers in Air Route Traffic Control Centers (ARTCC) provide air traffic services. The airspace overlying Will Rogers World Airport is contained within the Fort Worth ARTCC service area and includes the airspace in portions of Texas, Oklahoma, New Mexico, Louisiana, and Arkansas.

Aviation communication facilities associated with the Airport include the Air Traffic Control Tower on frequency 119.35, Ground Control on frequency 121.9, Approach/Departure Control on frequencies 120.2, 124.45, and 124.6 (depending on direction), and Automated Terminal Information System (ATIS) on frequency 125.85.

Airspace and NAVAIDS Analysis

Airspace. The following illustration, entitled *AIRSPACE/NAVAIDS MAP*, depicts the airports, local airspace, and navigational facilities in the vicinity of Will Rogers World Airport. The local airspace surrounding the Airport is designated as Class C airspace. Although the configuration of Class C airspace is tailored to each individual airport, it is generally that airspace surrounding airports that have an operational control tower, are serviced by a radar approach control, and that have a certain number of Instrument Flight Rules (IFR) operations or passenger enplanements. It usually consists of a five- nautical mile (NM) radius circle surrounding the airport that includes the airspace from the ground surface up to 4,000 feet Above Ground Level (AGL), and an outer area with a ten-NM radius that extends from 1,200 feet AGL to 4,000 feet AGL. Pilots must establish two-way radio communication with the ATCT facility providing air traffic services prior to entering Class C airspace and, thereafter, must maintain those communications within the airspace.

The Class C airspace surrounding Will Rogers World Airport is consistent with the generalized criteria presented above. The airspace within the inner five-NM radius circle extends from the surface [the Airport elevation is 1,295 feet Above Mean Sea Level (AMSL)] to an elevation of 5,300 feet AMSL. That airspace within the ten-NM radius circle extends from either floor elevation of 2,500 or 3,000 feet AMSL to the same 5,300-foot AMSL altitude cap at the inner



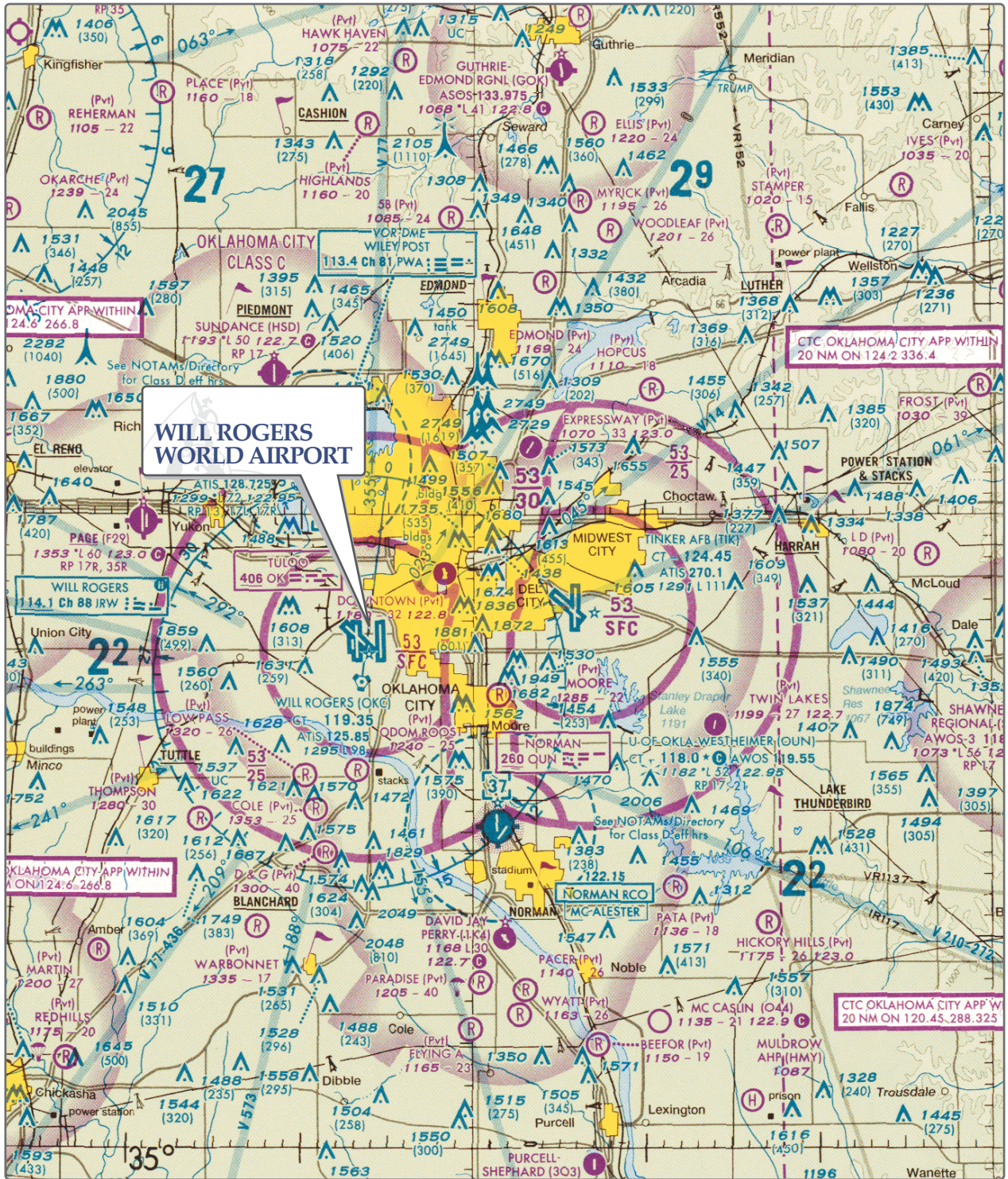
circle. Military airports, military operations areas, and restricted areas can also impact airspace use in the vicinity of a civil airport. Tinker Air Force Base, which is located approximately nine NMs to the east of the Airport, is the only military airport within the area surrounding Will Rogers World Airport.

Military Operations Areas (MOAs) in the vicinity of the Airport include the Washita MOA located approximately 26 NMs southwest of the Airport and the Vance 1B MOA located approximately 34 NMs northwest of the Airport. The Washita MOA has an altitude of use between 8,000 feet and 18,000 feet AMSL with a time of use between one hour before sunrise to one hour after sunset, Monday through Friday. The Vance 1B MOA has an altitude of use between 6,000 feet and 18,000 feet AMSL with a time of use between one hour before sunrise to one hour after sunset, Monday through Friday.

Navigational Aids. The navigational aids (NAVAIDS) available for use by pilots in the vicinity of Will Rogers World Airport are VORTAC facilities, VOR-DME facilities, and Non-Directional radio Beacon (NDB) facilities. A VORTAC (VHF Omnidirectional Range/Tactical Air Navigation) is a navigational aid providing VOR azimuth, TACAN Azimuth, and TACAN distance measuring equipment (DME) at a single site. A VOR-DME system is a Very High Frequency Omnidirectional Range Station with Distance Measuring Equipment transmitting very high frequency signals, 360 degrees in azimuth oriented from magnetic north. This equipment is used to measure, in nautical miles, the slant range distance of an aircraft from the DME navigation aid. NDBs are general purpose low- or medium-frequency radio beacons that an aircraft equipped with a loop antenna can home in on or determine its bearing relative to the sending facility.

The Will Rogers VORTAC (114.1 IRW) is located in the extreme southern part of airport property directly south of Runway 35L, the Wiley Post VOR-DME (113.4 PWA) is located roughly nine NMs north of the Airport, and the Kingfisher VORTAC (114.7 IFI) is located approximately 31 NMs northwest of the Airport. The Tuloo NDB (406 OKC) is located approximately five NMs to the north of the Airport, the Norman (260 OUN) NDB is located approximately ten NMs southeast of the Airport, and the El Reno (335 RQO) NDB is located approximately 20 NMs west of the Airport.





 Approximate Scale 1" = 8 Nautical Miles

Figure A8 Airspace/NAVAIDS Map



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Source: Sectional Aeronautical Charts: Dallas-Ft. Worth, Volume 0706 (West), June 2007.

A network of low-altitude published airways (Victor airways) in the vicinity of Will Rogers World Airport also traverses the area, which spans between the regional ground based VOR/DME and VORTAC equipment. Victor airways include the airspace within parallel lines located four NMs on either side of the airway and extend from 1,200 feet AMSL up to, but not including, 18,000 feet AMSL.

Approach Aids. There are presently several published instrument approach procedures at Will Rogers World Airport, which are listed in the following table entitled *INSTRUMENT APPROACH PROCEDURES*.

Table A1 **INSTRUMENT APPROACH PROCEDURES**

Type of Approach	Runway Designation	Lowest Ceiling Minimums	Lowest Visibility Minimums
ILS (Category I)	17L	200' (AGL)	½ mile
ILS (Category I)	17R	200' (AGL)	½ mile
ILS (Category I)	35L	200' (AGL)	½ mile
ILS (Category I)	35R	200' (AGL)	½ mile
ILS (Category II) ¹	35R	100' (AGL)	¼ mile
RNAV (GPS)	13	500' (AGL)	1-½ mile
RNAV (GPS)	17R	300' (AGL)	½ mile
RNAV (GPS)	31	400' (AGL)	1 mile
RNAV (GPS)	35L	300' (AGL)	1 mile
RNAV (GPS)	35R	400' (AGL)	¾ mile
RNAV (GPS)	17L	200' (AGL)	½ mile
RNAV (GPS) ¹	17L	300' (AGL)	¾ mile
RNAV (GPS) ¹	35R	300' (AGL)	½ mile
VOR ²	17L	400' (AGL)	½ mile

Source: U.S. Terminal Procedures, South Central, Volume 1 of 5, 21 February 2002. ¹ Special Aircrew and Aircraft Certification Required. ² Landing by fixed minimums.



Environmental Review Inventory

The purpose of an environmental review inventory is to analyze and identify potentially significant environmental resources or conditions on the Airport and within its surroundings that may affect airport development alternatives. The inventory will describe the existing environmental conditions, identify key environmental issues, and consider the appropriate federal environmental laws and regulations. It will be prepared in such a way that it will expedite any environmental processing required subsequent to the preparation of this Master Plan Update and prior to the implementation of the projects.

Air and Water Quality

The Federal Clean Air Act, as amended in 1990, requires states to have State Implementation Plans (SIP) to achieve established air quality goals, which were established by the U.S. Environmental Protection Agency (EPA) in 1970 and are called the National Ambient Air Quality Standards (NAAQS). The Federal Clean Air Act requires that all areas achieve these standards for six criteria air pollutants: carbon monoxide (CO), ozone (O₃), particulate matter (PM₁₀), sulfur dioxide (SO₂), oxides of nitrogen (NO_x), and lead (Pb). According to the EPA, all areas of Oklahoma are designated as areas of attainment for all National Ambient Air Quality Standards.

The primary water resources within the vicinity of the Airport are the North Canadian and Canadian Rivers, which are located approximately three miles to the north and four miles to the southwest, respectively. It should be noted that a seven-mile stretch of the North Canadian River near Downtown Oklahoma City has been renamed the Oklahoma River. The south part of airport property is within the drainage basin of the Canadian River, with the north part of the Airport located within the North Canadian River drainage basin. There are also several streams, including one unnamed tributary to the south and Cow Creek in the southwest quadrant of the Airport. The unnamed tributary flows into Cow Creek south of airport property, and Cow Creek then drains further south into the Canadian River.

The Canadian River Watershed has been designated as a sensitive watershed by the Oklahoma Department of Environmental Quality (ODEQ) for General Permit OKR10 *Storm Water Discharges From Construction Activities Within the State of Oklahoma*. This designation is two miles wide (one mile from each bank of the river) and requires applicants of construction activities located within the boundary to assess the potential effects of their construction stormwater discharges and discharge-related activities on federally listed endangered and



threatened species, and their habitats, to receive coverage under the Construction General Permit.

According to ODEQ, there are 13 Public Water Supply (PWS) wells located along the east and north Airport boundary, which supply water to the City of Yukon. Each well has an associated Wellhead Protection Area, which is a designated area, surrounding drinking water wells, that limits activities to minimize the risk of pollution.

Historical, Architectural, Archaeological, and Cultural Resources

Section 106 of the National Historic Preservation Act requires federal agencies, or their designated representatives, to take into account the effects of their undertakings on historic properties, which include archaeological sites, buildings, structures, objects, or districts. The National Park Service maintains the National Register of Historic Places, a database of identified and documented significant places. The Register indicates there are several listed sites in Oklahoma City. The closest registered historic site is a Douglas DC-3 Airplane, located at 6500 South MacArthur Boulevard in what is listed as “Hangar 10”. If any proposed development affects this site, the Airport will need to consult with the Oklahoma State Historic Preservation Office (SHPO).

Threatened and Endangered Species

The Endangered Species Act, as Amended, requires each federal agency to ensure that any action authorized, funded, or carried out by such agency is not likely to jeopardize the continued existence of any endangered or threatened species or result in the destruction or adverse modification of habitat of such species. According to the U.S. Fish and Wildlife Service, there are two endangered species and one threatened species located within Oklahoma County, and Cleveland County has one additional endangered species and one additional threatened species. The interior least tern (*Sterna antillarum*), the whooping crane (*Grus americana*), and the black-capped vireo (*Vireo atricapilla*) are the listed endangered species. The piping plover (*Charadrius melodus*) and Arkansas River shiner (*Notropis girardi*) are the listed threatened species.

The historic distribution of the interior least tern was the major river systems of the Midwestern United States. Their nesting habitat includes islands and sandbars along rivers that are mainly clear of vegetation. Shallow water is preferred for fishing and nesting areas must remain dry. They typically arrive in Oklahoma nesting sites from April through early June and spend four to five months before wintering in South America.



Historically, the whooping crane was found from the Canadian Northwest Territories to the Carolinas, the Texas Gulf Coast, and the intermountain plateau of central Mexico. Summer habitat includes marshes and prairie potholes and coastal marshes and prairies in the winter. The whooping crane can be found in western Oklahoma, including possibly Oklahoma and Cleveland Counties, during the spring and fall migrations.

The black-capped vireo, a songbird about four to five inches in length, had a historic breeding distribution from south-central Kansas through central Oklahoma and Texas to central Coahuila, Mexico. Presently, they are only found in three Oklahoma counties (Blaine, Cleveland, and Comanche). The black-capped vireo habitat consists of scattered trees and brushy areas, and foliage that extends to ground level is the most important element required for nesting.

The piping plover historically bred along the Atlantic Coast, on the Northern Great Plains, and around the Great Lakes. Piping plovers winter along the southern Atlantic and Gulf coasts, and in the Bahamas and West Indies. Although drastically reduced, remnant populations occur throughout their historic range. They nest on sandy beaches along the ocean or lakes, on bare areas of islands or sandbars along rivers, or on the pebbly mud of interior alkali lakes and ponds. Piping plovers migrate through Oklahoma each spring and fall.

Arkansas River shiners (small, heavy-bodied minnows) are native to wide, sandy-bottomed streams of the Arkansas River drainage in Arkansas, Kansas, New Mexico, Oklahoma, and Texas. Historically, they were abundant throughout the Arkansas River and its major tributaries. Presently, they are almost entirely restricted to the Canadian/South Canadian River in Oklahoma, Texas, and New Mexico. Designated critical habitat for this species exists along the Canadian River in Cleveland County, approximately four miles south of the Airport.

A representative from the United States Department of Agriculture (USDA) has stated that there have been no observances of any of the threatened or endangered species on Airport property in many years, nor does any habitat for such species exist on the Airport. Before development of any projects, the Airport should confirm that these threatened and endangered species are not located on Airport property, or that critical habitat of the species is not present within or near the project boundaries.

Wetlands

Wetlands are basically defined as areas inundated by surface or groundwater, with a frequency sufficient to support vegetation or aquatic life, requiring saturated or seasonally saturated soil



conditions for growth and reproduction. According to the U.S. Fish and Wildlife Service National Wetlands Inventory Maps, there are several wetlands, streams, and freshwater ponds located on Airport property. Freshwater forested/shrub wetland and freshwater pond wetlands are located on the south, west, and northeast sides of the Airport, and freshwater emergent wetlands are located on the southern, northern, and northeastern areas of Airport property.

Many of these wetlands will probably fall under the jurisdiction of the U.S. Army Corps of Engineers because of their connectivity to the surrounding creeks and ultimately to the North Canadian/Oklahoma River and Canadian River. Water quality issues will probably also need to be examined, particularly because of the connectivity of the wetlands to larger water sources.

Farmland

According to the National Soil Survey published by the National Resources Conservation Service, there are several areas of land on, and surrounding, the Airport that are considered to be prime farmland and farmland of statewide importance.

Airport property contains 21 different soils, which include Ashport silt loam, zero to one percent slopes (frequently flooded); Bethany silt loam, zero to one percent slopes and one to three percent slopes; Coyle loam, one to three percent slopes; Grainola-Ashport complex, zero to eight percent slopes; Grainola-Piedmont complex, three to five percent slopes (eroded); Kirkland silt loam, zero to one percent slopes; Kirkland-Urban land complex, zero to one percent slopes; Latrass loam, one to 45 percent slopes; Lawrie loam, zero to one percent slopes (rarely flooded); Norge silt loam, one to three percent slopes and three to five percent slopes; Piedmont silt loam, three to five percent slopes; Renfrow silt loam, one to three percent slopes; Renthin silt loam, one to three percent slopes; Renthin silty clay loam, one to three percent slopes; Renthin silty clay loam, three to five percent slopes (eroded); and, Renthin-Urban land complex, one to five percent slopes. Bethany silt loam, Kirkland silt loam, Lawrie loam, Norge silt loam, Piedmont silt loam, Renfrow silt loam, Renthin silt loam, and Renthin silty clay loam are all considered to be prime farmlands, which are all located in the northern, northeastern, eastern, southeastern, and southwestern areas of Airport property.

Floodplains

Executive Order 11988 directs federal agencies to take action to reduce the risk of flood loss; minimize the impact of floods on human safety, health, and welfare; and, restore and preserve the natural and beneficial values served by floodplains. Portions of the Airport are located within a 100-year floodplain. These 100-year floodplains are associated with Cow Creek and



the unnamed tributary that drains into Cow Creek. The Cow Creek floodplain is located directly west of Runway 17R/35L. The floodplain associated with the unnamed tributary is located south of Runway 17R/35L.

Section 4 (f) Property

Section 4 (f) of the Department of Transportation Act (recodified at 49 USC, Subtitle I, Section 303) provides that no publicly owned park, recreation area, wildlife or waterfowl refuge, or land of a historic site that is of national, state, or local significance will be used, acquired, or affected by programs or projects requiring federal assistance for implementation. Although no park land is expected to be affected by the operation of the Airport, even in its ultimate configuration, there are several parks located within two miles of the Airport and are included in the following table entitled *PARK LANDS IN THE VICINITY OF THE AIRPORT*.

Table A2 **PARK LANDS IN THE VICINITY OF THE AIRPORT**

Park Name	Distance	Direction
Tulsa Park	2 Miles	North
Lillard Park	1 Mile	North
Airport Heights Park	1 Mile	North
Youngs Park	2 Miles	Northeast
Brock Park	2 Miles	Northeast
Lorraine Thomas Park	2 Miles	North/Northeast
South Lakes Park	2 Miles	South
Earlywine Golf Course	2 Miles	Southeast
Woodson Park	1 Mile	Northeast
Sellers Park	1-½ Mile	East

Source: Microsoft Streets and Trips 2005 and Windows Live Local-Live Search Maps, October 2007.

Financial Inventory

The primary goal of a financial inventory is to gather information summarizing the financial management of the Airport. Additionally, it is important for developing an understanding of the financial structure, constraints, requirements, and opportunities for aviation activities, as related to the development of a capital improvement program. The information that has been gathered and reviewed will be used to formulate a reasonable and financially sound Capital Improvement Program (CIP) with which to fund projects identified in the master planning process.



With this goal in mind, revenue, expense, and management information for the Airport has been gathered for fiscal years 1997 through 2006. Federal and state capital improvement grant information has been compiled, including current funding policies and a historical review of previous grants. The Airport's current five-year CIP has also been received and reviewed.

The review of the financial documentation indicates the Airport is operationally self-supporting. Sources of revenue for the Airport include parking revenues, terminal building rentals, FBO leases, landing fees, commercial rentals, and fuel and oil commissions. The Airport collects a Passenger Facility Charge (PFC), the revenues from which are dedicated to specific capital improvement projects. Additionally, the Airport receives entitlement and discretionary monies from the FAA Airport Improvement Program (AIP) fund, which are also devoted to particular airport improvements. Major expenditures include salaries and benefits, contractual services, utilities, maintenance of buildings and equipment, and supplies.

The current five-year CIP for the Airport includes these types of projects:

- **Airfield pavement construction, maintenance, and reconstruction;**
- **Facilities upkeep and capital replacements;**
- **Passenger terminal expansion;**
- **Safety and security equipment;**
- **Passenger terminal facility improvements;**
- **Infrastructure improvements; and,**
- **NAVAIDS improvements.**

Issues Summary

Identification of the current and future development issues, which may impact the use of a public facility, is an important step in the planning process. This is particularly true of an airport where infrastructure investment is great, where the issues are complex, and where the entire airport facility, along with its environs, should be planned in unison to avoid incompatibility between the airport and its surroundings. The following narrative briefly identifies and discusses known present and future development issues facing Will Rogers World Airport. Some of these issues have been gleaned from the meetings conducted with staff and stakeholders early in the planning effort and some from specific information gathered during the inventory process, while others relate to general airport planning principles. A goal of this planning program is to evaluate these issues and influences, along with other considerations that



will arise during the process, and incorporate them as appropriate into the development plan and program for Will Rogers World Airport.

Preliminary analysis and discussions with Airport management indicate that some of the planning issues and influences that are of particular importance in the development of this Master Plan Update include:

- **Confirmation of Airside Development Program.** Confirmation of the number of runways, along with their lengths and orientations; the dimensions and locations of taxiway pavements; and, the identification of the critical aircraft types that will allow the Airport to accommodate all potential operators.
- **Industry Trends.** Recognizing current and future trends including such factors as Regional Jets for point-to-point service between secondary hubs and major domestic destinations, the increased impact of Low Cost Carriers (LCC) on existing markets and Legacy Carriers, the increasing use of business jet aircraft for corporate travel, and the evolving nature of the general aviation aircraft fleet.
- **Strategic Development Plan Coordination.** The Airport Trust has undertaken an important study to examine the strategic development of available land parcels within the approximately 8,000-acre Airport complex, with particular emphasis being placed on the eastside of the Airport, along Portland Avenue, where close to 1,000 acres of land are ready for development for mixed uses that may include: aviation, aviation-related and aviation support, and non-aviation opportunities. The Master Plan Update for the Airport tasks the consultant with the determination of post planning period aviation need analysis to help determine adequate reservation of land use parcels to meet aviation needs beyond 20 years. Strategic Development Plan and Master Plan Updates will need to be closely coordinated. To facilitate this coordination, core members of both planning teams are involved with both efforts.
- **Mike Monroney Aeronautical Center (MMAC).** The continuing influence of the Mike Monroney Aeronautical Center on physical development of Will Rogers World Airport will be an important planning consideration for the Master Plan Update.
- **Will Rogers Air National Guard Station.** The re-alignment of the 137th Airlift Wing at the Will Rogers Air National Guard Station brings about a change of mission for the facility that re-assigned the C-130s operated and maintained by the 137th Airlift Wing and transitioned to KC-135 aircraft that are based at Tinker Air Force Base. The mission change resulted in the relocation of two of the Air Force Flight Standards Agency's C-21



aircraft, and four OH-58 helicopters, one C-12, and two C-23 aircraft operated by the Oklahoma Army National Guard.

- **Airport Public Parking and Rental Car Operations Study.** The Airport Trust has commissioned a study to analyze future public parking and rental car operational needs. This study will explore future public parking needs, as well as the potential for a consolidated rental car facility that may open up additional public parking spaces within the existing five-story parking structure by relocating all on-airport rental car activity to a remote consolidated facility. Potential public parking expansion and rental car operations relocation will have a defining planning influence on the terminal area environs during this planning period.
- **Gate Utilization Study.** The Airport Trust has commissioned an airline passenger terminal gate utilization study to determine the possibility of gaining greater daily utilization on the existing 17 non-preferential boarding gates at Will Rogers World Airport. The planning need for analyzing Phase III terminal improvements (the construction of an additional airline concourse) is triggered when only one gate remains idle at the Airport. The gate utilization may determine greater frequency for gate sharing between carriers and forestall the need to commence the planning stage of Phase III development.
- **Airport Zoning Overlay Districts and Airport Land Use Compatibility.** A major focus of the planning effort for Will Rogers World Airport is the confirmation of the boundaries of Airport Environs Zones One & Two (AE-1, AE-2) and the maximization of overall land use compatibility for the area around the Airport that could be affected by aircraft operational activity. The overall effort should be to foster the height hazard protection, noise effects, overflight, and safety considerations of aircraft operations.

It is recognized that other issues and influences will be identified as the planning process moves forward. To a great degree, an understanding of the development issues, how the issues interact with each other, and how they are affected by over-arching airport development goals defines the “comprehensive” development recommendations that will ultimately be produced by this Master Plan Update.

