

taxiways, etc.), landside facilities are designed to accommodate the transfer of passengers between the air and ground. The primary aviation functions to be accomplished via landside at Dallas Executive Airport include aircraft storage hangars, aircraft parking aprons, general aviation terminal facilities, and automobile parking and access. The interrelationship of these functions is important to defining a long-range landside layout for general aviation uses at the airport. Due to an abundance of land available at the airport, careful consideration will also be given to areas that could be considered for non-aviation uses that can provide additional revenue support to the airport and support economic development for the region.

The orderly development of the airport terminal area, those areas along the flight line parallel to the runway, can be the most critical, and oftentimes the most difficult to control on the airport. A development approach of taking the path of least resistance can have a significant impact on the long-term viability of an airport. Allowing development without regard to a functional plan could result in a haphazard array of buildings and small apron areas, which will eventually preclude the most efficient use of valuable space along the flight line. Landside alternative considerations were summarized previously on **Exhibit 4A**. The following briefly describes proposed landside facility improvements.

AVIATION ACTIVITY LEVELS

Landside development areas should be divided into high, medium, and low intensity activity levels at the airport. The high-activity area should be planned and developed to provide aviation

services on the airport. An example of the high-activity areas is the airport terminal building and adjoining aircraft parking apron, which provides tiedown locations and circulation for aircraft. In addition, large conventional hangars used for fixed base operators (FBOs), aircraft maintenance, corporate aviation departments, or bulk aircraft storage would be considered a high-activity use area. The best location for high-activity areas is along the flight line, for ease of access to all areas on the airfield. Major utility infrastructure would need to be provided to these areas.

The medium-activity use category defines the next level of airport use and primarily includes smaller corporate aircraft that may desire their own executive hangar storage on the airport. The best location for medium-activity use is off the immediate flight line, but still readily accessible to aircraft including corporate jets. Due to an airport's layout and other existing conditions, if this area is to be located along the flight line, it is best to keep it out of the midfield area of the airport, so as to not cause congestion with transient aircraft utilizing the airport. Parking and utilities such as water and sewer should also be provided in this area.

The low-activity use category defines the area for storage of smaller single

and multi-engine aircraft. Low-activity users are personal or small business aircraft owners who prefer individual space in T-hangars and linear box hangars. Low-activity areas should be located in less conspicuous areas. This use category will require electricity, but generally does not require water or sewer utilities.

Ideally, terminal area facilities at airports should follow a linear configuration parallel to the primary runway system. The linear configuration allows for maximizing available space while providing ease of access to terminal facilities from the airfield. Landside alternatives will address development in specific areas on the airport. Separation of activity levels and efficiency of layout will be discussed as well.

In addition to the functional compatibility of the aviation development areas, the proposed development concept should provide a first-class appearance for Dallas Executive Airport. As previously mentioned, the airport serves as a very important link to the entire region whether it is for business or pleasure. Consideration to aesthetics should be given high priority in all public areas, as the airport can serve as the first impression a visitor may have of the community.



Dallas Executive Airport is located on approximately 1,070 acres. In order to allow for maximum development of the airport while keeping with FAA mandated safety design standards, it is very important to devise a plan that allows for the orderly development of airport facilities. Typically, airports will reserve property adjacent to the runway system for aviation-related activity exclusively. This will allow for the location of taxiways, aprons, and hangars.

In those circumstances where ultimate demand levels fall short of ultimate build-out need, some airports will encourage non-aviation commercial or industrial development. The potential of non-aviation development on airport property can provide an additional revenue source in the form of long-term land leases for the airport. As evidenced in Chapter Two, aviation-related growth is forecast to increase throughout the planning period of this Master Plan, thus, a large portion of airport property should be dedicated for airfield operations and aviation use; however, planning will consider designating certain portions of airport property for non-aviation development as well.

AIRCRAFT HANGAR DEVELOPMENT

Landside alternatives to follow will consider the construction of additional aircraft hangars at Dallas Executive Airport. Hangar development takes on a variety of sizes corresponding with several different uses.

Commercial general aviation activities are essential to providing the necessary services needed on an airport, especially at a reliever airport located in a large metropolitan area such as the case for Dallas Executive Airport. This includes businesses involved



with, but not limited to, aircraft rental and flight training, aircraft charters, aircraft maintenance, line service, and aircraft fueling. These types of operations are commonly referred to as FBOs. The facilities associated with businesses such as these include large conventional type hangars that hold several aircraft. High levels of activity often characterize these operations, with a need for apron space for the storage and circulation of aircraft. These facilities are best placed along ample apron frontage with good visibility from the runway system for transient aircraft. Utility services are needed for these types of facilities, as well as automobile parking areas.

The mix of aircraft using Dallas Executive Airport is expected to continue to include business class aircraft which have larger wingspans. These larger aircraft require greater separation distances between facilities, larger apron areas for parking and circulation, and larger hangar facilities.

Aircraft hangars used for the storage of smaller aircraft primarily involve T-hangars or linear box hangars. Since storage hangars often have lower levels of activity, these types of facilities can be located away from the primary apron areas, in more remote locations of the airport. Limited utility services are needed for these areas.

Other types of hangar development can include executive hangars for accommodating several aircraft



simultaneously. Typically, these types of hangars are used by corporations with company-owned aircraft or by an individual or group of individuals with multiple aircraft. These hangar areas typically require all utilities and segregated roadway access. Currently, there is over 500,000 square feet of hangar, office, and maintenance area provided at Dallas Executive Airport made up of a combination of the hangar types previously discussed.

REVENUE SUPPORT LAND USES

Due to the large amount of land on airport property exceeding the space needed for forecast aviation demand, consideration has been given for the City of Dallas – Aviation Department to utilize portions of the airport for non-aeronautical purposes such as commercial, industrial, or manufacturing development. It should be noted that the City does not have the approval to use airport property for non-aeronautical purposes at this time. Non-aviation use of airport property requires specific approval from the FAA. The Master Plan process is not the method of obtaining such an approval for non-aeronautical uses, even if these uses are ultimately shown in the Master Plan and on the Airport Layout Plan (ALP). A separate request justifying the use of airport property for non-aeronautical uses will be required once the Master Plan is complete. The Master Plan can be a source for developing that justification.

Federal Law obligates an airport sponsor to use all property shown on an ALP and/or Property Map for public airport purposes. A distinction is generally not made between property acquired locally and property acquired with federal assistance. However, property acquired with federal assistance or transferred surplus property from the federal government may have specific covenants or restrictions on its use different from property acquired locally.

These obligations will require that the City work with TxDOT to formally request a release from the terms, conditions, reservations, and restrictions contained in any conveyance deeds and assurances in previous grant agreements. A release is required even if the airport desires to continue to own the land and only lease the land for development. The obligations relate to the use of the land just as much as they do to the ownership of the land.

U.S. Code 47153 authorizes the FAA to release airport land when it is convincingly clear that:

- a. Airport property no longer serves the purpose for which it was conveyed. In other words, the airport does not need the land now or in the future because it has no aviation-related or aeronautical use, nor does it serve as approach protection, a compatible land use, or a noise buffer zone.
- b. The release will not prevent the airport from carrying out the purpose for which the land was conveyed. In other words, the airport will not experience any negative impacts from relinquishing the land.

- c. The release is actually necessary to advance the civil aviation interests of the counters. In other words, there is a measurable and tangible benefit for the airport or the airport system.

Ultimately, the ability of the City to use airport property for non-aeronautical revenue production will rest upon a determination by the FAA that portions of airport property are no longer needed for airport-related or aeronautical uses. To prove that land is not needed for aeronautical purposes, an assessment and determination of the area that will be required for aeronautical purposes will be needed. The Master Plan provides this analysis.

A formal request to the FAA for a release from federal obligations will have several distinct elements. The major elements of the request will include:

1. A description of the obligating conveyance instrument or grant.
2. A complete property description including a legal description of the land to be released.
3. A description of the property condition.
4. A description of federal obligations.
5. The kind of release requested. (lease or sale)
6. Purpose of the release.
7. Justification for the release.
8. Disposition and market value of the released land.

9. Reinvestment agreement. A commitment by the County to reinvest any lease revenues exclusively for the improvement, operation, and maintenance of the airport.
10. Draft instrument of release.

An environmental determination will also be required. While FAA Order 1050.1E, *Environmental Policies and Procedures*, states that a release of an airport sponsor from federal obligations is normally categorically excluded and would not normally require an Environmental Assessment (EA), the issuance of a categorical exclusion is not automatic and the FAA must determine that no extraordinary circumstances exist at the airport. Extraordinary circumstances would include a significant environmental impact to any of the environmental resources governed by Federal Law. An EA may be required if there are extraordinary circumstances.

BUILDING RESTRICTION LINE AND RUNWAY VISIBILITY ZONE

The building restriction line (BRL) identifies suitable building areas on the airport. The BRL encompasses runway safety areas, obstruction clearances, RPZs, navigational aid critical areas, areas required for terminal instrument procedures, and other areas necessary for meeting airport line-of-sight requirements.

Two primary factors contribute to the determination of the BRL: type of runway (utility or other-than-utility) and the capability of the instrument approaches. At Dallas Executive Airport, Runways 13-31 and 17-35 are considered other-than-utility runways given that they support business jet

operations and are afforded straight-in instrument approach procedures. Runway 13-31 provides for precision instrument approach minimums while non-precision instrument approach minimums apply to Runway 17-35.

The BRL is a product of Title 14 of the Code of Federal Regulations (CFR) Part 77 transitional surface clearance requirements. These requirements stipulate that no object be located in the primary surface, defined as being no closer than 250 feet from a non-precision instrument runway having visibility minimums greater than $\frac{3}{4}$ -mile and no closer than 500 feet to a runway served by a precision or non-precision instrument approach with visibility minimums as low as $\frac{3}{4}$ -mile. From the primary surface, the transitional surface extends outward at a slope of one vertical foot to every seven horizontal feet. Traditionally, the BRL is set at a point where the transitional surface is 35 feet above the runway elevation. For Runway 17-35, this distance is 495 feet from the runway centerline. For Runway 13-31, this dimension is 745 feet from the runway centerline. It should be noted that structures can be located between the BRL and the primary surface as long as the highest point of the structure is not a penetration to the 7:1 transitional surface. Careful consideration should be given to potential landside development as it relates to the BRL, especially on the west side of the airport.

Airfield development should also be planned so it does not penetrate the runway visibility zone (RVZ). It is recommended that a clear RVZ be maintained where two runways intersect. The RVZ outlines the area needed to be clear of obstructions so that aircraft on both runways can see other aircraft before it is too late to avert

an accident. The distance between the runways' intersection and each runway end determines the location of each runway's visibility point.

LANDSIDE DEVELOPMENT ALTERNATIVES

There are two large areas which are given specific attention for planned development at Dallas Executive Airport. The first is the area on the east side of the airport. Currently, the majority of landside development is located on the airport's east side, and property remains available for future development. Several parcels of land are available that could accommodate both aviation and non-aviation related development. Due to the existing infrastructure (roadways, utilities, etc.) in place to support future development, the east side of the airport could accommodate a significant amount of future growth needs. For these reasons, future development in this area is planned and will be discussed in the next section.

A second area that currently supports limited development is on the west side of the airport. Over 250 acres of land is highlighted in the form of mixed aviation and non-aviation uses. Recent infrastructure improvements have positioned land on the airport's west side to be attractive for development. As a result, alternatives for potential development in this area will also be discussed. **Exhibit 4S** provides a generalized land use plan for the future development of Dallas Executive Airport.

The alternatives to be presented are not the only options for development. In some cases, a portion of one alternative could be intermixed with another. Also, some development concepts

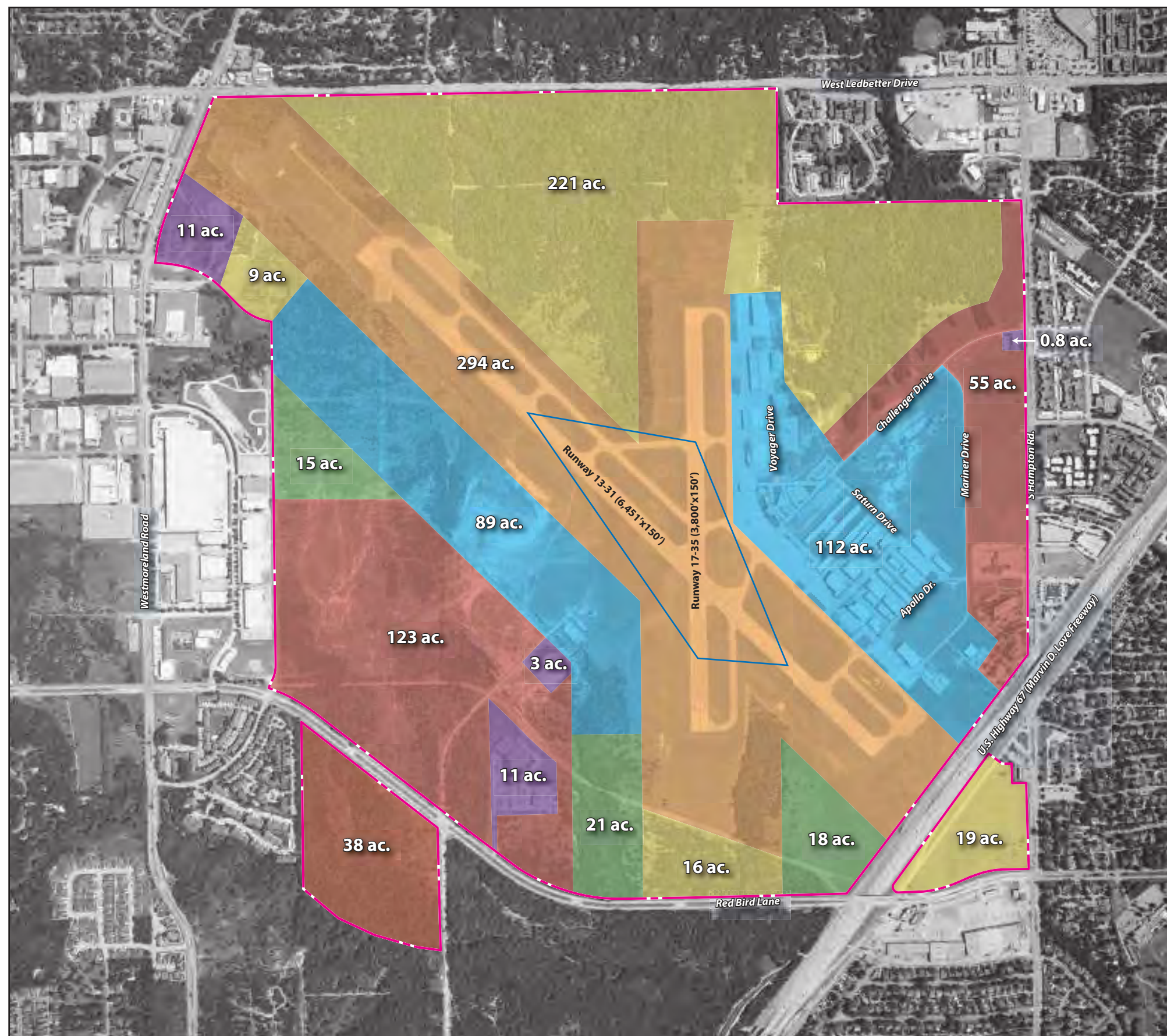
could be replaced with others. The final recommended plan only serves as a guide for the airport which will aid the City in strategic marketing of available airport properties. Many times, airport operators change their plan to meet the need of specific users. The goal in analyzing landside development alternatives is to focus future development so that airport property can be maximized.

EAST LANDSIDE CONSIDERATIONS

As previously discussed, the majority of existing development is located on the east side of the airport and consists of a general aviation terminal building, aircraft storage hangars, aircraft parking aprons, and support facilities to include fuel storage, automobile parking, and aircraft rescue and firefighting (ARFF). **Exhibit 4T** highlights other areas on the east side that could be utilized for aviation-related development. In addition, certain parcels are designated for potential non-aviation development.

Approximately 24 acres of land located between Challenger Drive and Mariner





- LEGEND**
- Airport Property Line
 - Runway Visibility Zone
 - Airfield Operations
 - Aviation Related Development
 - Mixed Use Aviation/Non-Aviation Development
 - Non-Aviation Related Development
 - Public/Institutional
 - Open Space/Recreational

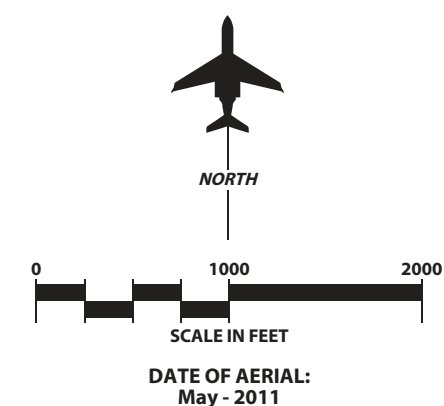
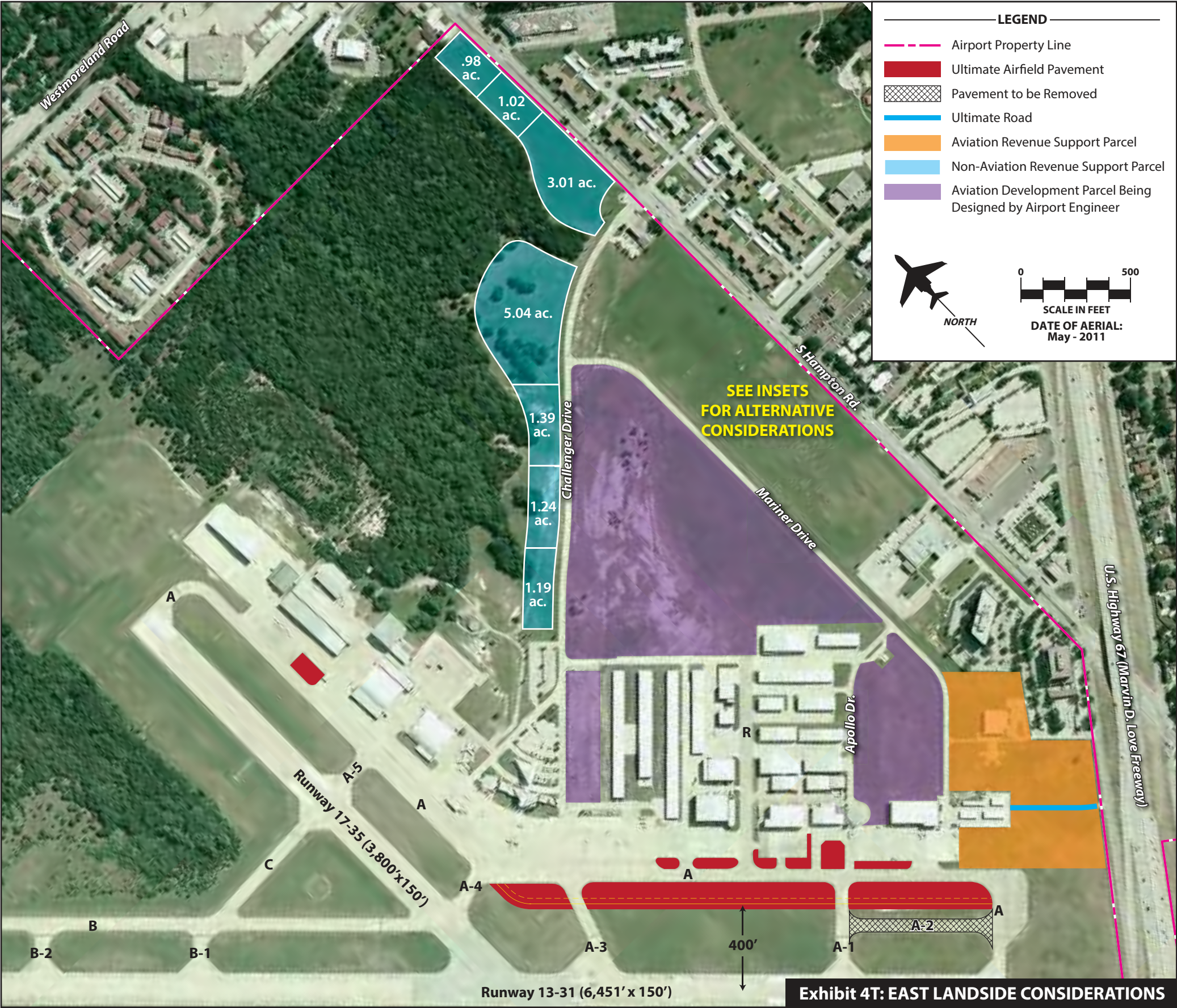


Exhibit 4S: GENERALIZED ON-AIRPORT FUTURE LAND USE PLAN



Drive is planned to accommodate aviation activities. In order to provide aircraft access to this area, a northerly extension of Taxiway R is being proposed. Two other parcels adjacent to the south of this site are also designated for aviation development. It should be noted that the layouts for these three parcels are currently under design by the airport's engineer and will be presented on the recommended development concept to be included later in this study.

Additional aviation development is also proposed to the east of Mariner Drive. Currently, a hangar facility and helipad associated with the City of Dallas Police Department are located in this area. Future consideration should be given to allowing additional landside development in the form of aviation-related activities to further bolster airport revenues. A roadway extending east from the outer road associated with U.S. Highway 67 is also proposed which would provide another automobile access point serving landside facilities in this area. Prior to future development in this immediate vicinity, significant drainage improvements will be needed, which are currently under design in a separate study from the Master Plan.

Exhibit 4T also proposes non-aviation development in the east landside area that could support commercial, retail, industrial, office, and business park land uses. Alternative 1 depicts six non-aviation parcels between 3.1 and 3.6 acres in size located between South Hampton Road and Mariner Drive. Automobile access to these parcels would be provided by extending a frontage roadway system east from South Hampton Road. Another option for potential non-aviation development is proposed in Alternative 2, which also allows for six parcels ranging in size

from 2.0 to 4.2 acres. This alternative includes a more extensive roadway network connecting South Hampton Road and Mariner Drive.

Any future development in this area should consider the residential development immediately east of South Hampton Road. As such, designating portions of airport property immediately adjacent to the west of South Hampton Road for non-aviation purposes could help serve as a noise buffer between the residential communities and aircraft movement areas farther west on airport property.

Other areas adjacent to South Hampton Road and Challenger Drive on the east side of the airport are not provided with airfield access. Providing access to these areas would be very challenging due to topography and associated costs to improve the area. As a result, these areas could be developed for non-aviation uses. Seven non-aviation parcels are proposed ranging in size from approximately one to five acres. Prior to allowing non-aviation development in these areas, the City of Dallas – Aviation Department would need to get approval from the FAA to release property for this use.

Other landside considerations on the east side of the airport deal with providing additional and more efficient

use of aircraft parking apron space at Dallas Executive Airport. Currently, parallel Taxiway A, serving the southern portion of Runway 13-31, is located 530 feet from the runway (centerline to centerline). Under ultimate planning conditions, only 400 feet of separation is needed between the runway and parallel taxiway. As a result, **Exhibit 4T** depicts the relocation of Taxiway A 130 feet south and, in doing so, allows for additional aircraft parking apron space along the flight line. In addition, seven apron in-fill areas are proposed adjacent to Taxiway A that will increase parking apron spaces, while also providing for more efficient aircraft taxiing operations adjacent to FBOs and other specialty aviation operators.

WEST LANDSIDE CONSIDERATIONS

Currently, the airport traffic control tower (ATCT) and airport maintenance building are located on the west side of the airport, approximately 1,000 feet and 1,200 feet southwest of the intersection of Runways 13-31 and 17-35, respectively. In addition, approximately ten acres of land on the west side of the airport is dedicated to activities related to the Texas National Guard Armory. Although the east side of the airport can continue to accommodate aviation demand in the short term, the City of Dallas has made a



concerted effort to improve the airport's west side to include the extension of roadway and utility infrastructure in order to accommodate future aviation and non-aviation activities. As such, development alternatives for this area were also studied and discussed in the following section.

The west landside alternatives to follow focus on potential development southwest of the intersection of Runways 13-31 and 17-35. These alternatives consider the construction of a taxiway running parallel to portions of each runway in order to provide aircraft access to the entire airfield system. Per airfield design standards previously discussed, the partial parallel taxiway serving Runway 13-31 is proposed at 400 feet from the runway centerline, while the partial parallel taxiway serving Runway 17-35 is located 300 feet from the runway centerline. Furthermore, the extension of a taxiway farther southeast serving the south side of the approach end of Runway 31 is also depicted. Given the location of the ILS glideslope antenna and its associated critical area, this taxiway is set back 750 feet from the runway centerline. Providing taxiway access through the southeast side of the airport could potentially allow for landside development that supports aviation activities as demand may warrant.

An area of open space is provided around the ATCT that allows for a security buffer between it and potential public landside development. Previous security guidelines for the placement of airport facilities indicated that a 300-foot buffer be in place for ATCT facilities. More recent guidelines set forth by the Transportation Security Administration (TSA) base security setbacks on elevated threat levels and other factors rather than specific distance requirements. In any event, coordination between the

FAA, TSA, and City of Dallas – Aviation Department will be necessary in order to address all ATCT security needs as the west side of the airport is developed.

West Landside Alternative 1

West Landside Alternative 1 is shown on **Exhibit 4U**. This alternative designates approximately 1,300 feet of land south of Runway 13-31 for aviation development. The principal philosophy followed is to group facilities supporting similar activity levels together.

The construction of a large aircraft parking apron and movement area would allow access to six conventional hangars west of the ATCT as presented on the exhibit. Each of these is approximately 40,000 square feet. An array of general aviation activities could be accomplished in this centrally located high-activity area ranging from large aircraft storage to more specialized FBO operations. East of the ATCT, six more hangars, although smaller in size, are proposed that would share an aircraft parking apron being proposed adjacent to the west of Runway 17-35.

To the west of the large conventional hangars and aircraft parking apron are approximately 11 acres of land designated for executive hangar development. These hangars are often utilized by corporate flight departments that possess their own aircraft, or an individual or group of individuals, that have several aircraft. Aircraft access to these hangar facilities is provided by a by-pass taxiway located south of the proposed parallel taxiway serving Runway 13-31.

Additional development in the form of four T-hangars and/or linear box

hangars is proposed toward the property line on the west side of the airport. These lower-activity aviation facilities are typically dedicated for private aircraft storage only and set farther away from the central area of the airfield, which is preferred. Two taxilanes extending south from the by-pass taxiway would allow aircraft access to this area.

If aviation demand warranted the build-out of these aviation facilities previously identified on the west side of the airport, additional aircraft fuel storage space may be needed to accommodate the aviation growth. As a result, a fuel farm is shown directly south of the airport maintenance facility.

This alternative depicts future airfield access development occurring north of an automobile access roadway that extends west from an existing road that cul-de-sacs approximately 1,100 feet southwest of the ATCT. To the south of this road is a large area designated for 14 non-aviation development parcels that range in size from approximately 5.8 to 15.6 acres. These parcels could accommodate compatible land uses such as commercial, industrial, office, and/or business park activities that do not require airfield access, which is desirable given the significant drop in terrain moving south from the runway system at Dallas Executive Airport. It should be noted that similar land uses currently exist immediately adjacent to the west side of airport property. An extensive roadway network is proposed providing vehicle access to these parcels.

South of Red Bird Lane, the airport owns approximately 38 acres of land that is currently void of any development. Steep terrain features in this area will warrant costly improvements prior to

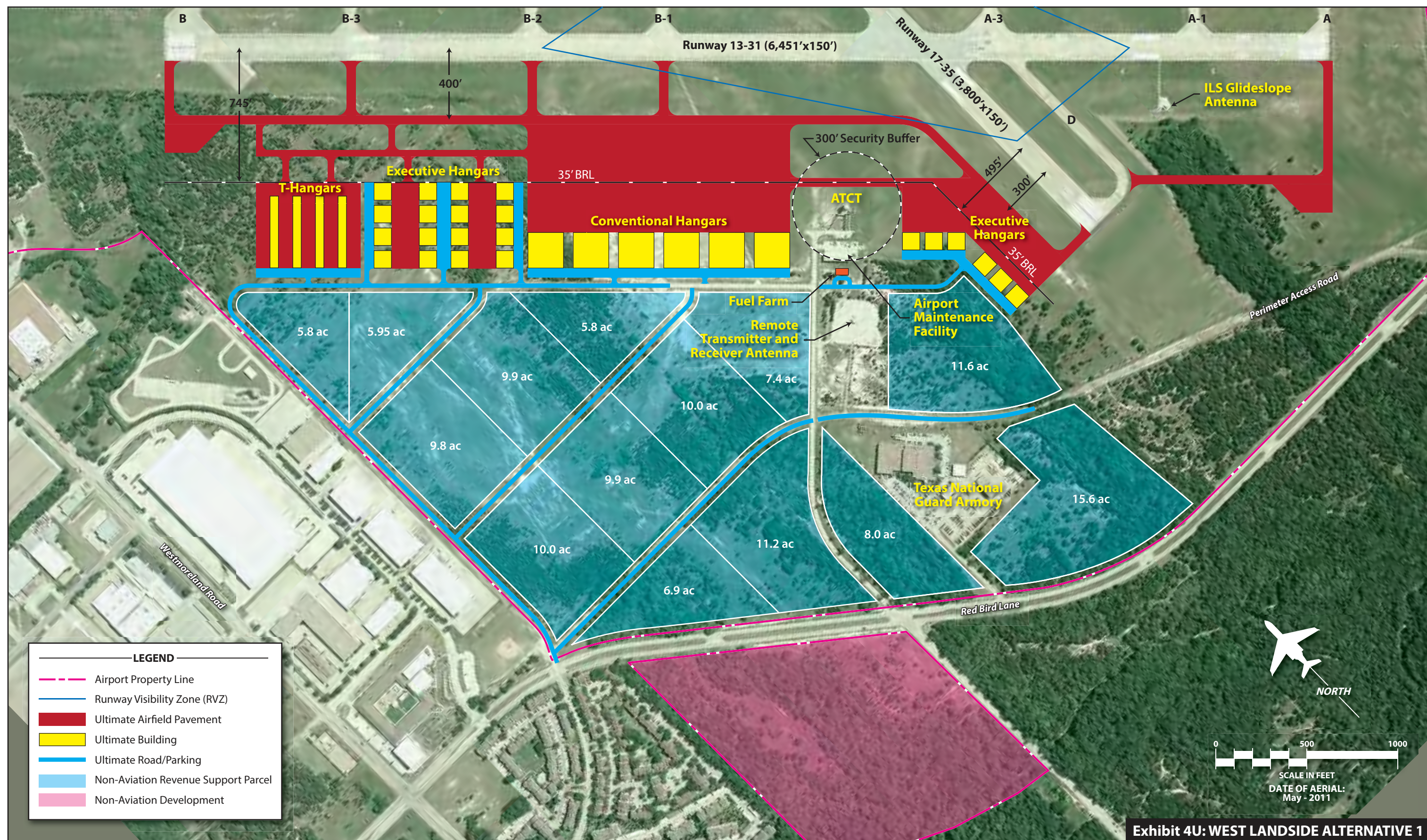


Exhibit 4U: WEST LANDSIDE ALTERNATIVE 1

landside development. Nonetheless, this area is designated for future non-aviation development as demand may dictate.

West Landside Alternative 2

West Landside Alternative 2, depicted on **Exhibit 4V**, maintains the central area on the airport's west side for high-activity aviation development in the form of four conventional hangars. Significant apron construction would allow aircraft movement areas to these facilities. Also included in this area are four aviation parcels that could support executive hangar development. Aircraft access to this area is provided by two taxiways extending south from the parallel taxiway serving Runway 13-31.

Additional aviation development in the west area of the airport is further proposed in this alternative to include a dedicated fuel storage area and ten aeronautical parcels and their respective layouts. Aviation activities in this area are extended farther south than what is proposed in Alternative 1. Aircraft access to these parcels is provided via taxiways extending south from the proposed parallel taxiway. To the east of the ATCT, 4.5 acres of property are identified for future aviation development divided into three parcels. These parcels could be leased to private entities, who in turn, construct hangar facilities to accommodate aviation activities.

Similar to the previous alternative, a large area of non-aviation revenue support development is present on Alternative 2. While the total acreage dedicated to non-aviation activity is less than what is proposed in Alternative 1, the number of parcels offered is more than doubled. As depicted, 29 non-aviation

development parcels are considered ranging in size from approximately two to six acres. A roadway network similar to what was shown on the previous alternative provides vehicle access to these parcels.

West Landside Alternative 3

Exhibit 4W depicts the final alternative for this landside analysis. West Landside Alternative 3 proposes five separate taxiways extending south from the parallel taxiway system serving Runways 13-31 and 17-35, each of which lead to separate aviation development areas and activity levels. Immediately west of the ATCT, two taxiways lead to aviation facilities in the form of nine conventional hangars centrally located on the west side of the airport that could support FBO and other specialty aviation functions. Large apron areas adjacent to the hangars support high-activity levels of aviation demand.

Farther west, a third taxiway leads to a complex of smaller hangar facilities encompassing approximately ten acres of land combined. While this area would need to be designed to accommodate a range of aircraft, including smaller single engine airplanes to business jets, it is intended that this area serve medium levels of aviation activity including group aircraft storage and smaller amounts of specialty aviation businesses.

A fourth taxiway farthest west from the ATCT leads to T-hangars and/or linear box hangars in addition to two aviation development parcels. These areas should be planned for low-activity aviation levels in the form of private aircraft storage. To the east of the ATCT, a taxiway extending southwest of the partial parallel taxiway serving

Runway 17-35 leads to two aviation development parcels containing 2.1 and 1.8 acres, respectively. A fuel farm is depicted on this exhibit, located approximately 400 feet southwest of the ATCT with direct access from the main roadway leading north from Red Bird Lane.

Just as in the two previous alternatives, land is set aside for non-aviation development uses to the south of the aviation-related development extending to Red Bird Lane. In this alternative, nine parcels are outlined ranging in size from 6.2 to 31.7 acres.

SUMMARY

The process utilized in assessing airside and landside development alternatives involved a detailed analysis of facility requirements through the long term planning horizon and, in some cases, beyond. Current and future airport design standards were considered at every stage of the analysis. Safety, both in the air and on the ground, was given a high priority in the analysis of alternatives.

After review and input from the PAC, City of Dallas – Aviation Department, TxDOT, and FAA officials, a recommended development concept will be put forth by the consultant. The resultant plan will represent an airside facility that fulfills safety design standards and a landside complex that can be developed as demand dictates. The development plan for Dallas Executive Airport must represent a means by which the airport can evolve in a balanced manner, both on the airside and landside, to accommodate the forecast demand. In addition, the plan must provide flexibility to meet activity growth beyond the long range planning horizon.

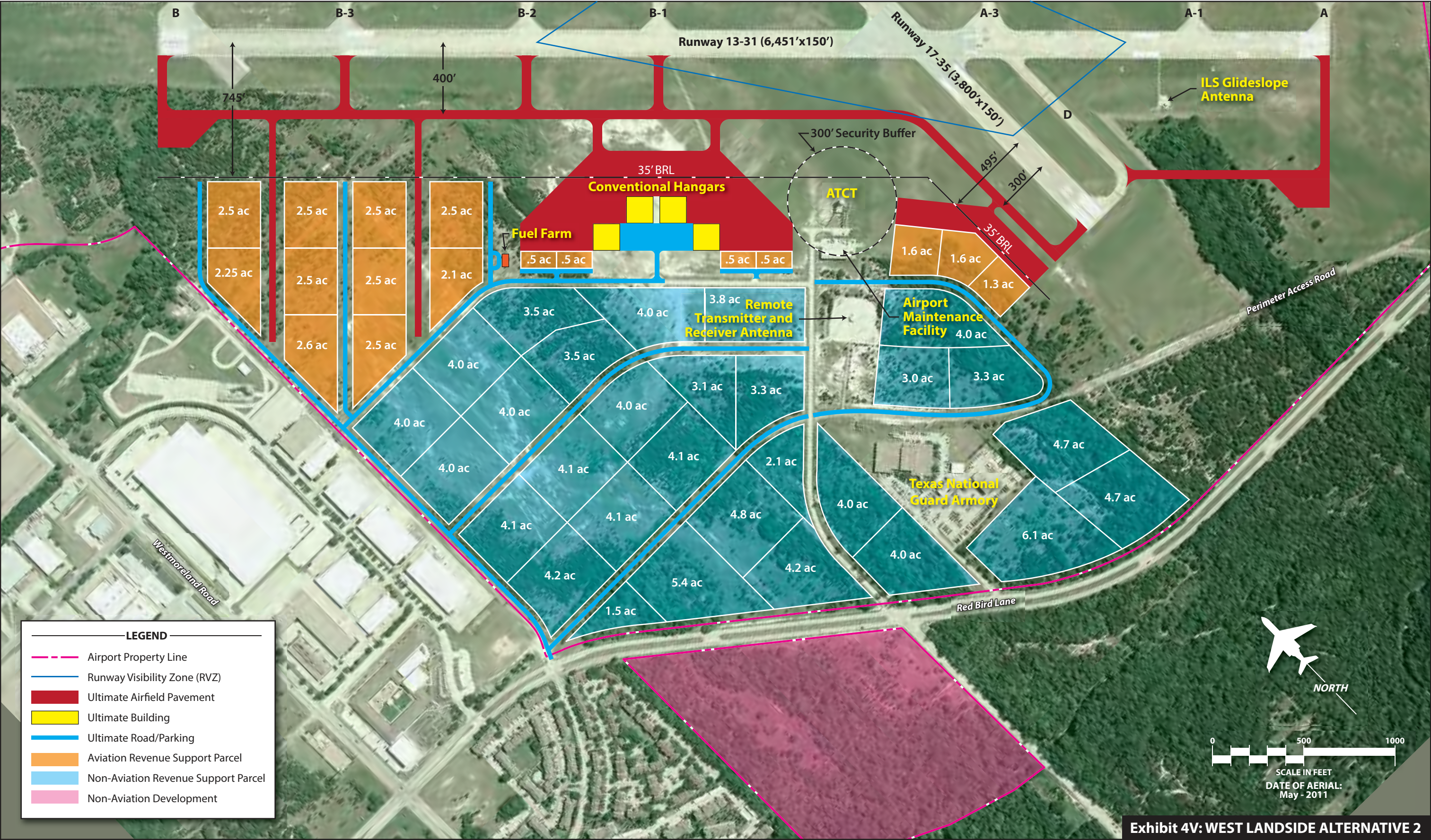


Exhibit 4V: WEST LANDSIDE ALTERNATIVE 2

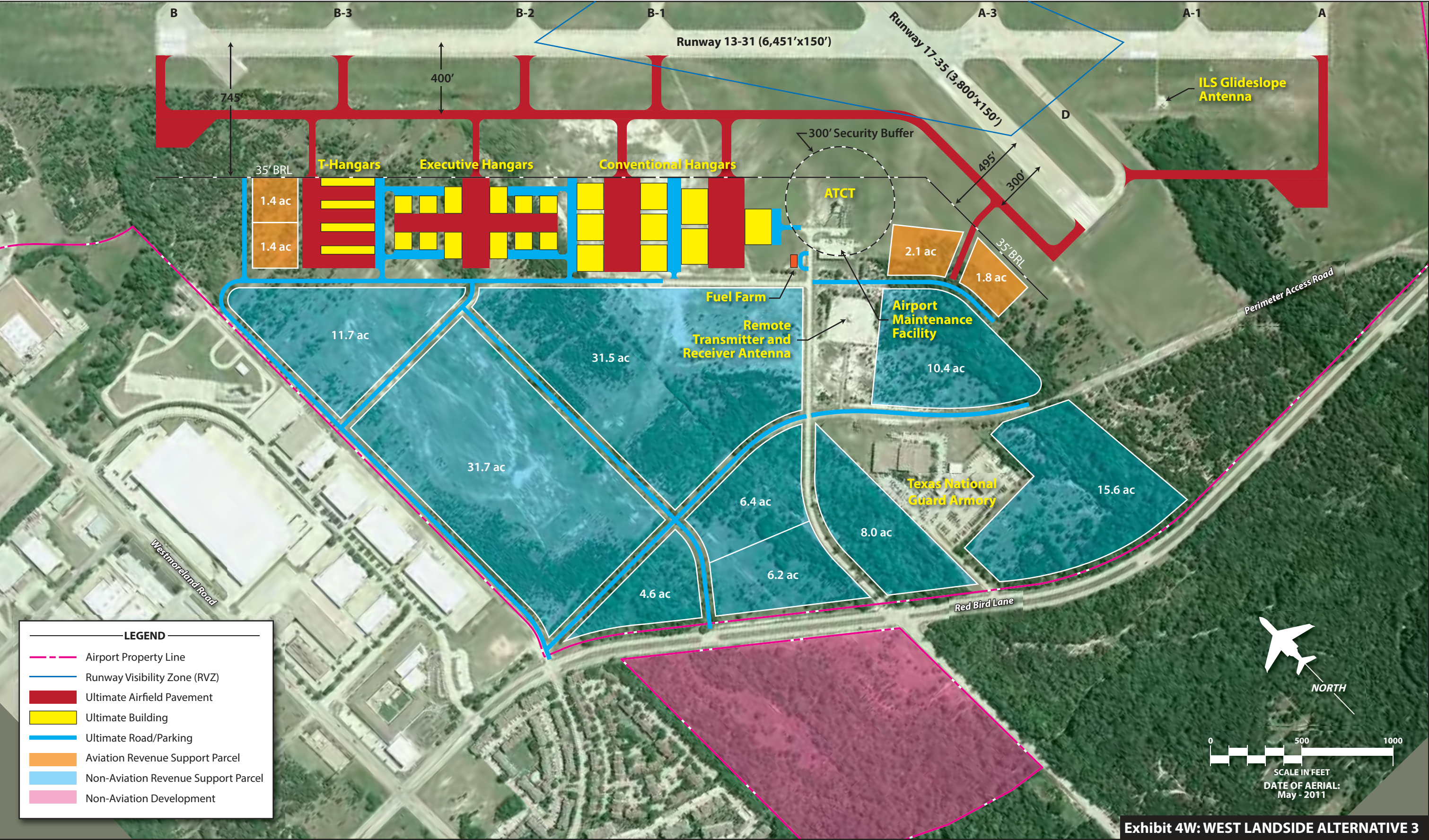


Exhibit 4W: WEST LANDSIDE ALTERNATIVE 3