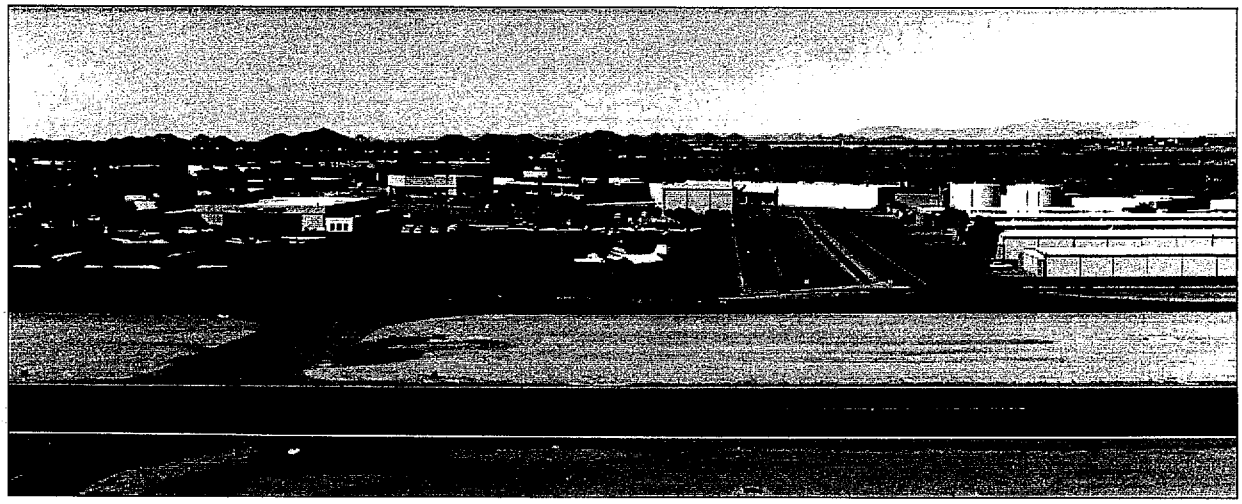
Chapter 5

DEVELOPMENT ALTERNATIVES

DEVELOPMENT ALTERNATIVES

Airport Master Plan

Chapter 5



In the previous chapter, "unconstrained" facility needs for the twenty-year planning period were identified. The next step in the planning process is to examine the options available within the existing resources of Scottsdale Airport and its immediate vicinity, and determine the airside and landside alternatives that will maximize the use of these resources. Once the airside and landside development alternatives have been identified, the level of aviation activity that can realistically be accommodated at Scottsdale Airport can be approximated.

Any development proposed for a master plan is evolved from an analysis of projected need for a set period of time. Even though the needs were determined be the best methodology available, it cannot be assumed that future events will not change these needs. The master planning process attempts to develop a viable scheme for meeting the needs brought about by projected demands for the next 20 years. No scheme should be adopted that would preclude expansion beyond the 20-year period or that would require expensive commitments prior to the certainty of need. No plan of action should be developed which is inconsistent with the goals and objectives of the City of Scottsdale which has a vested interest in the results of any development.

The alternatives considered in this evaluation were not limited to just those that would permit the complete development of Scottsdale Airport. In fact, the first alternative that was examined was the "no-build" alternative. This alternative presents several major impacts to the public as a result of no future development. The second alter-

native is the consideration to developing the existing airport in response to the projected future demands. Before either of these alternatives can be examined, one must review the development issue at the airport. The following section discusses the development issue at Scottsdale Airport, followed by the discussion of the development alternatives.

AIRPORT DEVELOPMENT ISSUES

As identified in Chapter Two, Aviation Demand Forecasts, limitations imposed by policy constraints and the physical dimensions of the existing airport's property may limit the ability of Scottsdale Airport to meet the "unconstrained" forecast facility needs. Undeveloped property on or adjacent to the airport and portions of the existing airport property which could be redeveloped may only accommodate a portion of this demand. The amount and type of development that can be accommodated is the subject of further analysis in this chapter.

Without sufficient facilities to meet the forecast requirements, it would be necessary to prioritize the facility requirements and set parameters for future expansion before analyzing development alternatives. The following criteria were developed after a thorough analysis of the facility's deficiencies, "unconstrained" forecast demands and existing limitations.

- **Parallel Runway:** Although a parallel runway would enhance safety and capacity, the physical characteristics of the airport, practical and economical aspects of relocating buildings and facilities eliminate this option from further analysis.

- **Runway Width:** The runway width at Scottsdale Airport is currently 75 feet, which is 25 feet less than the current FAA design standard. In order to enhance safety and meet design guidelines, a 100 foot runway width should be provided early in the planning period.

- **Land Acquisition:** Land acquisition, particularly the Thomas Parcel, the Rey West Parcel, the Keycor Parcel, the Butherus Parcel, and the Airport Drive Parcel will be key to providing the ability to accommodate a larger portion of the "unconstrained" forecast.

- **T-hangars/shades and Conventional Hangar Development:** There is an existing demand for additional T-hangars/shades and Conventional Hangar space. The existing airport property, along with additional land acquisition, requires evaluation to utilize this land as efficiently as possible, in an attempt to accommodate as much of the "unconstrained" forecast as possible.

- **Commercial Service Terminal Building:** The existing terminal building is not adequate to satisfy the airport's long-term commercial service facility needs. The ability to expand the existing building or the

location of a new facility should be identified.

- **Improve Ground Access:** The existing airport access road is via Butherus Drive to Airport Drive. Enhanced traffic flow through the existing terminal area should be encompass within the development of alternatives. Additional access may be required to accommodate future landside development.

DEVELOPMENT ALTERNATIVES

The overall purpose of this chapter is to evaluate both airside and landside alternatives based on environmental, economic, and aeronautical factors to determine which alternatives best accommodate as much of the local aviation demand as possible. Two potential alternatives are described in detail in the following sections, comprising both a no-build alternative and developing the existing airport site.

NO-BUILD ALTERNATIVE

In analyzing and comparing the costs and benefits of various development alternatives, it is important to keep in mind the consequences of no future development at Scottsdale Airport. The "no-build" alternative essentially involves maintaining the airport in its present condition and not providing for improvements to the existing facilities. The primary result of this alternative would be the inability of the airport to accommodate the demands being placed upon it by its future users.

The Facility Requirements chapter identified an existing and future need for additional airside and landside facilities. Without these facilities (i.e., T-hangars, conventional hangar space, etc.) airport users will be constrained from taking maximum advantage of their air transportation capabilities. Just as important will be the City's ability to attract and serve new users, especially potential businesses and industries relocating to the area.

With these restrictions in mind, it would appear that the "no-build" alternative would not be in the best interest of the airport or the local economy.

DEVELOP EXISTING AIRPORT SITE

The Facility Requirements chapter identified both the airside and landside facilities required to satisfy forecast aviation demand throughout the planning period. The overall goal is to produce a balanced airside and landside complex to serve forecast aviation demand. The remainder of this chapter will focus on the various airside and landside development alternatives that could enhance Scottsdale Airport's ability to accommodate the forecast aviation demand.

AIRSIDE DEVELOPMENT ALTERNATIVES

Airside facilities are generally the first consideration in developing airport alternatives because of their primary role in supporting and directing aircraft movements. Airside development also typically dominates airport land use; therefore, selection of an airside concept will usually affect the amount and location of other types of land uses.

Runways and taxiways must be designed to safely and efficiently assist the flow of aircraft to and from the airside and landside facilities. The primary considerations in airside development at Scottsdale Airport are the runway width, the ability of the airport to meet current FAA design standards, and the enhancement of airfield capacity.

Based on the aviation demand forecast presented in Chapter Two, Scottsdale Airport can be expected to continue to serve aircraft in Approach Category D (approach speeds between 141 and 166 knots) and in Airplane Design Group II (aircraft with wingspans less than 79 feet). The design standards applied to the development of public airports are prescribed in *FAA Advisory Circular 150/5300-13, Airport Design.* Under current FAA design standards, the existing aircraft fleet at Scottsdale Airport would require a 100-foot runway width. Because runway width is critical to overall safety, it is recommended that the 100-foot width be provided at Scottsdale Airport. The widening of the runway would also require the relocation of the existing Medium Intensity Runway Lighting (MIRL).

Another airside issue at Scottsdale Airport is enhancements to airfield capacity. The most efficient means of acquiring additional capacity is to provide a parallel runway. At Scottsdale Airport, however, the development of a parallel runway is economically and physically impractical. Capacity could be increased by completing Bravo Taxiway, located on the east side of the runway, as a full-parallel taxiway from the Air Traffic Control Tower to the northern end of the runway. By providing full-parallel taxiways on both sides of the runway, traffic flow to and from the runway and landside facilities would be enhanced. Additional taxiway exits should also be constructed to provide additional opportunities for aircraft to move between the runway and parallel taxiways. Currently, Bravo Taxiway and its associated exit taxiways are equipped with edge reflectors. It is recommended that Bravo Taxiway and any additional exit taxiways be equipped with Medium Intensity Taxiway Lighting (MITL), as are Alpha Taxiway and its associated exits.

Scottsdale Airport currently provides "circling" instrument approaches, which provide the pilot with directional information to the airport but not to a specific runway end. Because of the significant amount of business type aircraft using the airport, a GPS nonprecision approach should be established to both runway ends if possible. The establishment of a GPS nonprecision approach to Scottsdale Airport would enhance the

airport's ability to accommodate aircraft in poor weather conditions. The 34:1 approach slope clearances associated with a GPS nonprecision approach to Runway 21 may be affected by the proximity of the Central Arizona Project (CAP) canal/levy north of the airport. The clearance criteria will be examined later in this chapter. For planning purposes, the design standards associated with the establishment of a GPS nonprecision approach will be applied to Scottsdale Airport. The establishment of a GPS approach to Scottsdale Airport will however ultimately be determined by the FAA.

During the development of Scottsdale Airport the most current FAA guidelines at the time of development were followed. Over the years the FAA Design Standards have been modified, replaced, or superseded and some of the separation standards have been changed, resulting in the airport not being capable of meeting all of the most current design standards. The City of Scottsdale has two options for resolving any deviation from design standards: the first is to accommodate the standard by relocating any obstructions or facilities and the second option is to request Modifications from Standards for those standards which can not be met without significant financial impacts. In the case of Scottsdale Airport, it will be assumed that the FAA will grant Modifications to Standards for those design standards which can not be met and that do not significantly affect safety. These design standards include the Runway Object Free Area Width, the Runway Centerline to Holdline Separation, the Runway Centerline to Parallel Taxiway Centerline Separation, and the Runway Centerline to Aircraft Parking Separation.

Two additional design standards currently not met at Scottsdale Airport are the Runway Safety Area (RSA) Length and the Runway Object Free Area (ROFA) Length. Under the current design standards, these two lengths beyond the ends of the runway should be 1,000 feet. At Scottsdale Airport Runway 3 meets this standard, however, Runway 21 has only 600 feet available to meet this standard. In order to accommodate the RSA/ROFA length on the approach end of Runway 21, a 400 foot runway displacement would be necessary. According to *FAA Advisory Circular 150/5300-13*, a displaced runway threshold is that portion of the runway which is available for takeoffs in either direction and landings from the opposite direction. The 400-foot displacement to Runway 21 would also provide the necessary approach slope clearances for the establishment of a GPS nonprecision approach. In the short-term, airport officials should request a Modification to Standard for these two standards. As the airport attracts aircraft with 30 or more passenger seats, however, the airport will need to apply for an F.A.R. Part 139 Certificate. Because Part 139 specifies safety enhancements and procedures, it is expected that the FAA will require the displacement of Runway 21 at the time of certification. The determination of whether the runway would ultimately require a displaced threshold would be determined by the FAA during the Part 139 certification process.

When displaced thresholds are utilized, FAA recommends the use of "declared distances" to evaluate and define the usable runway length. Declared distances are simply defined as the amount of runway that is declared available for certain takeoff and landing operations. Specifically, declared distances incorporate the following concepts:

- **Takeoff Run Available (TORA)** - The runway length declared available and suitable for the ground run of an aircraft taking off;
- **Takeoff Distance Available (TODA)** - The TORA plus the length of any remaining runway and/or clearway beyond the far end of the TORA;
- **Accelerate-Stop Distance Available (ASDA)** - The runway plus stopway length declared available for the acceleration and deceleration of an aircraft aborting a takeoff; and
- **Landing Distance Available (LDA)** - The runway length declared available and suitable for landing.

Table 5A, Declared Distances, presents the appropriate distances available with the existing 750 foot displaced threshold to Runway 3 and the ultimate 400 foot displaced threshold to Runway 21 at Scottsdale Airport.

TABLE 5A
Declared Distances
Scottsdale Airport

Runway	TORA	TODA	ASDA	LDA
Existing Runway Configuration				
Runway 3	8,251	8,251	8,251	7,501
Runway 21	8,251	8,251	8,251	8,251
Ultimate Runway Configuration				
Runway 3	8,251	8,251	7,851	7,101
Runway 21	8,251	8,251	8,251	7,851

Source: AC 150/5300-13, Airport Design

The displacement to Runway 21 would also require that the threshold and Runway End Identifier Lights (REILs) be relocated. Recently, the Visual Approach Slope Indicators (VASIs) lights for both runways were replaced with the state-of-the-art Precision Approach Path Indicators (PAPIs).

Other design standards that have changed recently are the dimensions of the Runway Protection Zones (RPZ). The RPZ, by definition, is an area off the runway end intended to enhance the protection of people and property on the ground. Under the current design standards, Scottsdale Airport would be

required to identify both approach and departure RPZs due to the use of displaced thresholds. At Scottsdale Airport, the RPZs would be the same size whether visual approaches or GPS nonprecision approaches (with greater-than one mile visibility) are provided. **Exhibit 5A, Airside Development,** depicts the recommended airside development for the 20-year planning period at Scottsdale Airport.

AIRSIDE DEVELOPMENT COST

Table 5B, Airside Development Costs, identifies the "order of magnitude" development costs for providing the airside facilities discussed. These reflect general cost estimates for site preparation and airside development and should be used for informational purposes only. As shown in **Table 5B,** the cost of the airside development is approximately $3.3 million.

TABLE 5B
Airside Development Costs
Scottsdale Airport

Development Item	Estimated Cost
Earthwork/Drainage	$300,000
Runway Widening (23,000 SY)	$802,300
Relocate MIRLs	$50,000
Taxiway Extension (12,500 SY)	$435,600
Taxiway Exit Construction (6,950 SY)	$243,100
Install Taxiway Lighting (21,300 LF)	$745,500
Relocate Threshold Lights	$30,000
Relocate REILs	$10,000
Runway/Taxiway Markings	$50,000
Airside Subtotal	**$2,666,500**
Engineering & Contingencies (25%)	$666,625
TOTAL AIRSIDE COSTS	**$3,333,125**

LANDSIDE DEVELOPMENT ALTERNATIVES

There are several landside functions which need to be accommodated at Scottsdale Airport. General aviation, FBO leaseholds, and commercial service are the primary functional sectors. In addition, the ATCT, ARFF, airport maintenance, and non-aviation related development areas are necessary support facilities. The interrelationships of these functional areas are important to defining a long-range landside layout for the airport. Landside facilities should be grouped with similar functions or uses. Each landside alternative must be planned with airfield as well as

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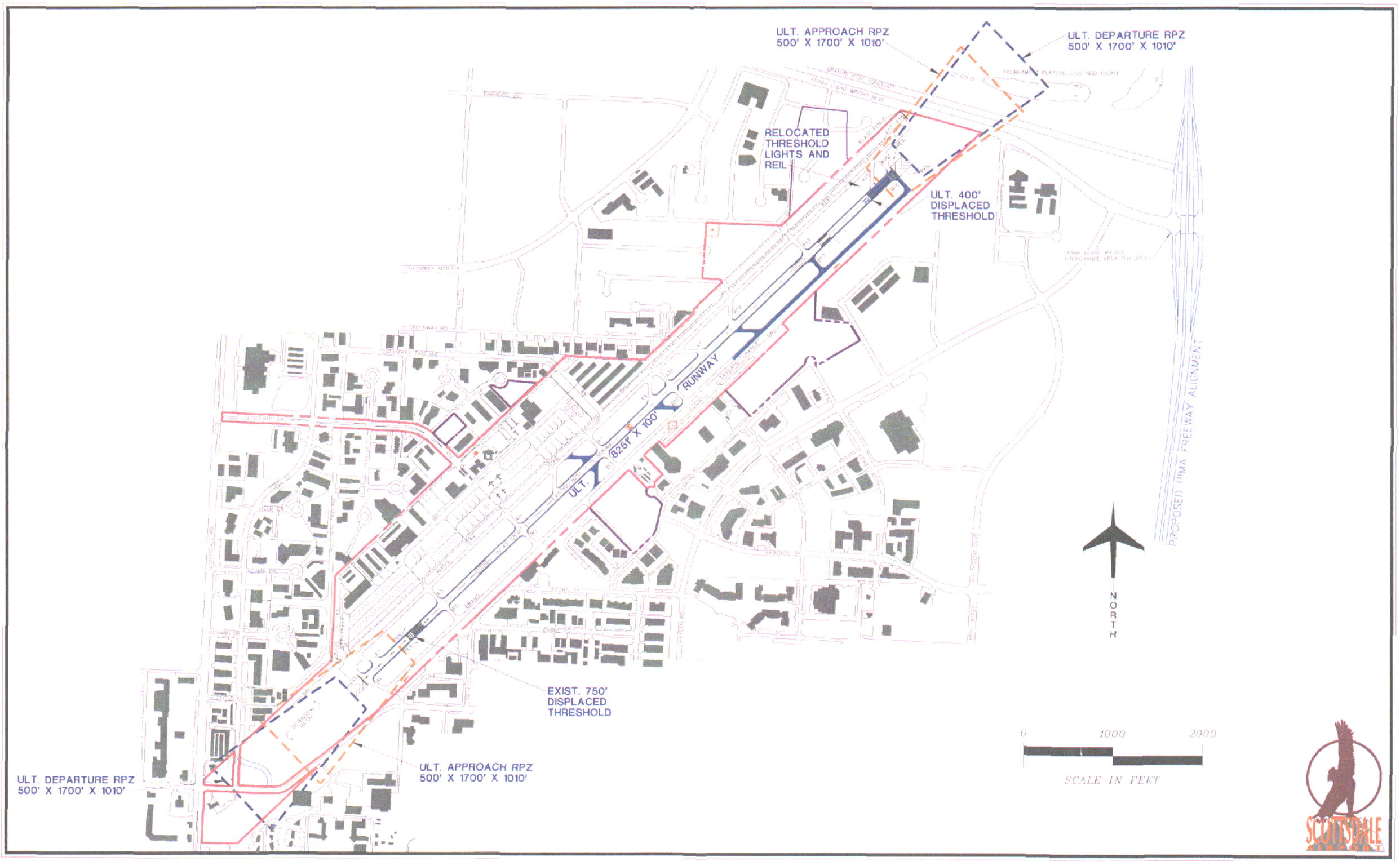

Exhibit 5A
AIRSIDE DEVELOPMENT

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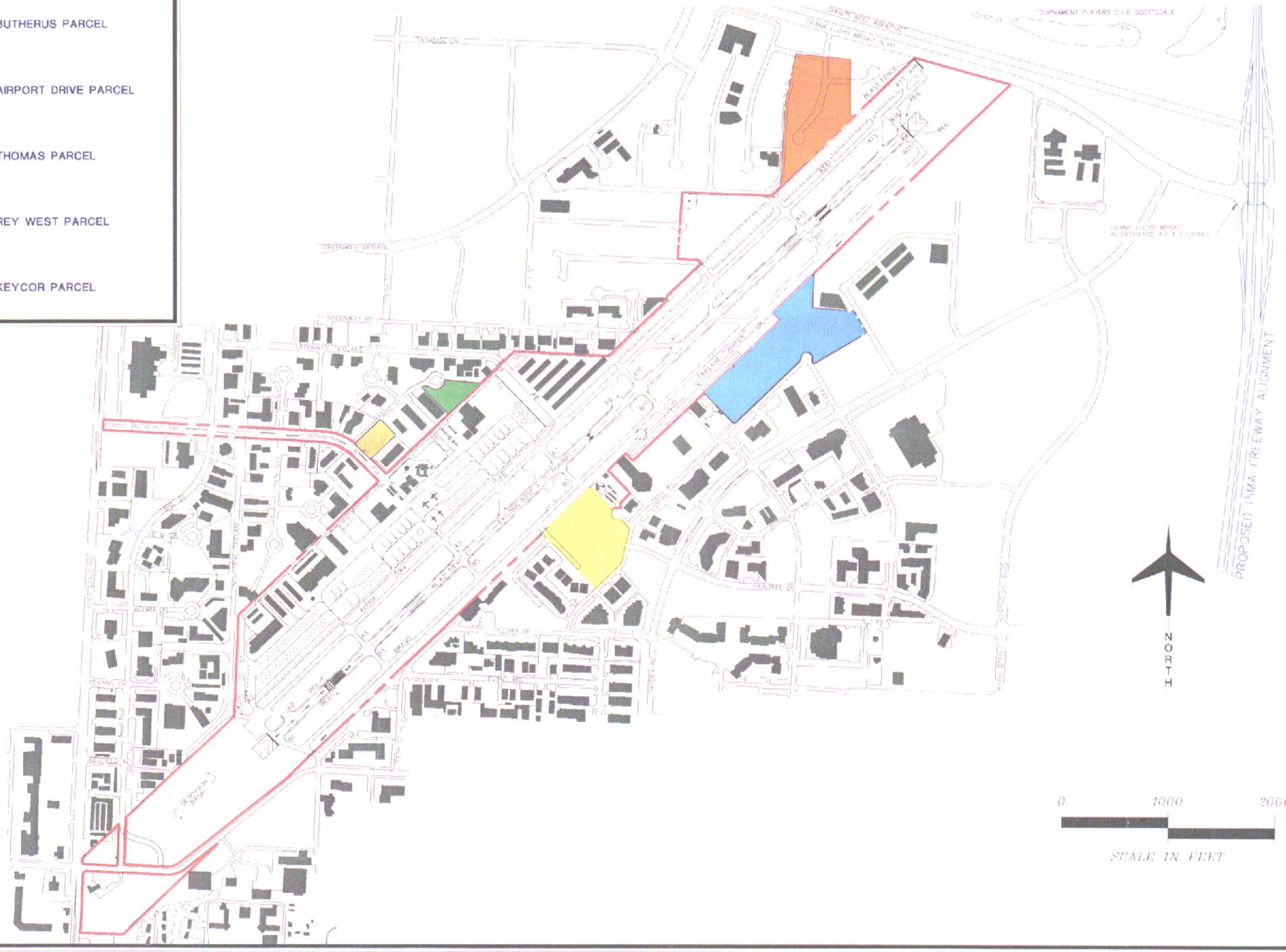
LEGEND:

- BUTHERUS PARCEL
- AIRPORT DRIVE PARCEL
- THOMAS PARCEL
- REY WEST PARCEL
- KEYCOR PARCEL


PARADISE LN
GREENWAY PARKWAY
GREENWAY RD
GREENWAY ALIGNMENT
BUTHERUS DR
ALMA
EVANS DR
ALMA DR
EVANS RD
OLIVE AVE
THOMAS RD
EARLL DR
EVANS DR
ROOSEVELT
ROOSEVELT
ROOSEVELT

93MP13-5C-3/3/97

SCOTTSDALE RD.
73RD. ST
HELM DR
ACOMA DR
EVANS DR.
REDFIELD RD
INDUSTRIAL TAXILANE
74TH ST.
GREENWAY TAXILANE
75TH ST.
76TH ST
GREENWAY RD.
GREENWAY ARTERIAL
78TH ST.
AIRPORT DR.
A1
A2
A3
A4
A5
A6
A7
A8
A9
ALPHA
VASI-27
REIL
N 43° 58'41" E
EXISTING 8251' X 75' RUNWAY
B1
750'
B3
BRAVO
B5
B7
73rd ST.
DETENSION BASIN
76TH ST.
ACOMA DR.
EVANS RD.
78TH WY.
HAYDEN RD.
ZONE-1
0
500
1000
SCALE IN FEET

LEGEND:

① T-HANGARS

② CONVENTIONAL HANGAR

EXISTING PROPERTY LINE

ULTIMATE PROPERTY LINE

SCOTTSDALE AIRPORT

Exhibit 5C
SOUTHSIDE DEVELOPMENT

tion at Scottsdale Airport, the City Hangar/Shade area could be redeveloped to include a conventional hangar or an office/executive hangar complex similar to the Air Commerce Center. One other development option is to develop approximately 96 T-hangars/shades on the Keycor Parcel (identified for acquisition). The separation of general aviation activities across the runway, however, may result in delayed refueling and inconvenient pilot services due to the limited FBO access to this area.

It is recommended that maximum advantage be taken with the remaining developable parcels on the southside of the airport. It must be recognized, however, that some development identified on the southside is on existing leaseholds. The actual development would be determined by the leaseholder and their ability to obtain the necessary construction capital. There is a potential to accommodate approximately 125,000 square feet of additional conventional hangar space and 106 new T-hangars/shades on the southside; however, this assumes the loss of the 10 T-hangars and 23 T-shades in the City Hangar/Shade area and the acquisition of the Keycor Parcel.

Northside Alternatives

Given the limited space on the southside of Scottsdale Airport, the ability to accommodate additional T-hangar/shade development will need to be focused on the northside of the airport property. The following three alternative locations for additional T-hangar/shade development are shown on **Exhibit 5D, Northside Alternatives**. T-hangar construction adjacent to existing airpark taxilanes would be required to maintain the 50-foot centerline-to-edge easements. No aircraft access from the airpark taxilanes will be provided to the proposed T-hangar development areas.

Alternative 1 proposes an additional 74 T-hangars/shades on the Cholla Parcel on the west side of Kilo Ramp. In order to provide aircraft access to this parcel, 17 existing tiedowns would need to be removed. If the NDB facility is decommissioned and removed in the future (due to the significant advancement of GPS technology), an additional 13 hangars/shades could be accommodated. Ground access to this area can be provided via the existing street system. An advantage of this alternative is that the Cholla Parcel is currently owned by the City and, therefore, could be available for development in the short-term.

Alternative 2 identifies the development of an additional 115 T-hangars/shades on the Thomas Parcel (identified for acquisition). In order to provide adequate aircraft access to this development, 16 existing tiedowns would need to be removed from the Kilo Ramp. Ground access to this area can also be provided by the existing street system and access is slightly enhanced by the proximity to Frank Lloyd Wright Boulevard. The slight disadvantage of this alternative is that the Thomas Parcel is not oriented perpendicular to the runway.

The final alternative, Alternative 3, provides an additional 150 T-hangars/ shades on the Rey West Parcel on the east side of the airport. Although this alternative provides a large amount of additional hangars and adequate ground access, the disadvantage is that this would separate similar general aviation activities. The separation of general aviation activities across the runway may result in delayed refueling and inconvenient pilot services due to the limited FBO access to this area.

Recommendation

Based on an examination of the southside development and each of the three northside alternatives, it is recommended that the southside developable areas be expanded to the maximum extent possible and that hangars/shades be developed on the Cholla Parcel, the Thomas Parcel, and the Keycor Parcel. The recommended development could result in an increase of 125,000 square feet of conventional hangars space and 266 T-hangars/shades with a loss of 33 existing tiedowns and the loss of the City Hangar/Shade Area. Development could take place in the short-term in areas on the southside, the Cholla Parcel, and the Thomas Parcel.

COMMERCIAL SERVICE TERMINAL BUILDING

The location of the commercial service terminal building is another key issue in determining landside facility development. For this reason, four potential sites have been evaluated, including: the existing terminal building, the Cholla Parcel, the Thomas Parcel, and the Rey West Parcel. Each of these alternatives are discussed in the following sections.

Existing Terminal Location

An examination of the existing terminal building location was conducted. The current expansion of the terminal building may be adequate in the short-term, however, it does not appear that over the long-term that the utilization of the existing location for commercial service would be feasible.

The advantage to this location is that the building is already constructed and owned by the City. The disadvantages, however, seem to outweigh this issue. As the forecast commercial service activity is realized, not only will the existing, expanded, terminal building be inadequate, but the interaction of commercial service and general aviation aircraft on the apron will result in a degradation of security. In the long-term, it would also appear that there are no future expansion capabilities of the existing terminal building, nor would there be the ability to provide adequate auto parking. The existing terminal area facilities also includes all of the aircraft services, therefore, would be expected to continue to attract the general aviation users. In addition, the general aviation demand currently met by the existing terminal building would need to be provided within a combination of the FBO facilities or Kilo Ramp Pilot Lounge.

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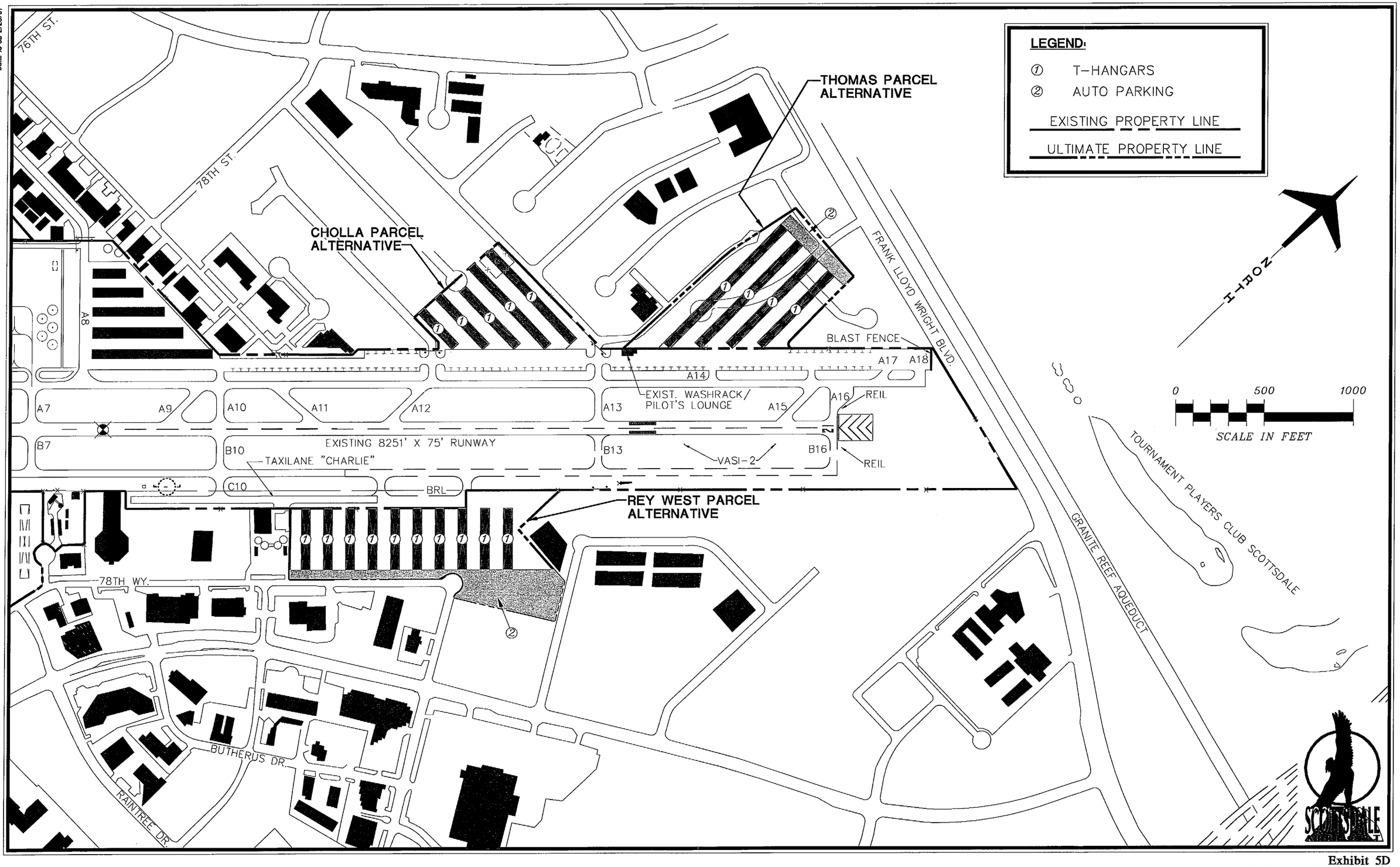

Exhibit 5D
NORTHSIDE ALTERNATIVES

Cholla Parcel Location

The second alternative is the development of a commercial service terminal building on the Cholla parcel, as identified on **Exhibit 5E, Commercial Service Terminal Alternatives**. Within this existing airport parcel, an expanded apron, terminal building, and auto parking area can be accommodated. In order to provide aircraft access to this development, 34 existing tiedowns would need to be removed.

The advantage of this location is that the parcel is currently owned by the City and that the existing terminal building could continue to be utilized for the general aviation demand. The disadvantages include the inconvenient ground access and the interaction of commercial service and general aviation aircraft on the apron. This commercial service location would result in general aviation parking aprons being located adjacent to both sides of the commercial service apron area. Ideally, these two uses should be separated in order to enhance security and reduce aircraft interactions.

Thomas Parcel Location

In this alternative, the Thomas Parcel would be acquired for the construction of a terminal building, apron area, and adjacent auto parking. In order to provide aircraft access and enhanced security, 50 existing tiedowns would need to be removed.

The advantages of this location are the enhanced ground access from Frank Lloyd Wright Boulevard, an increased auto parking area, and the ability to continue to use the existing terminal building for general aviation purposes. The disadvantages to this location are that this site does not provide complete separation of commercial service and general aviation activities. In addition, the location at the far end of the runway would be somewhat inconvenience for commercial service facility due to the increased aircraft taxi distance.

Rey West Parcel Location

The acquisition of the Rey West Parcel and the construction of a commercial service terminal building on that site is the fourth alternative. As in the previous alternatives, a terminal building, apron, and auto parking area would be provided. Unlike the previous alternatives, however, there are no general aviation tiedowns that would need to be removed.

The major advantage of this alternative is the distinct separation of commercial service and general aviation activities. By locating the commercial service terminal on the Rey West Parcel, security can be enhanced significantly and ground access is enhanced by the proximity to the proposed Pima Freeway. This site also provides the ability to expand the terminal building to accommodate additional demand beyond this planning period. Another advantage is the ability to utilize the existing terminal building for general aviation purposes. Once again, the disadvantage of this alternative, similar to the two pre-

vious alternatives, is that the parcel is not currently owned by the City.

Recommendation

Based on the evaluation presented in the previous sections, it is recommended that the Rey West Parcel be acquired for the development of a commercial service terminal building and associated facilities. This parcel provides the greatest ability for enhanced security by separating commercial activity from general aviation activity. In addition, the existing terminal building can continue to serve the general aviation demands.

GROUND ACCESS IMPROVEMENTS

Another key issue at Scottsdale Airport is the ability to provide adequate ground access to existing and future facilities. The enhancement of access to the existing terminal area was evaluated in a Circulation Study conducted by Bolduc, Smiley & Associates, Inc., in 1993. The study recommended that the Airport Drive Parcel be acquired for enhanced vehicular circulation through the terminal area as well as a reconfigured terminal auto parking area.

Another ground access issue at Scottsdale Airport is the traffic congestion and delay that occurs at the 73rd Street and Thunderbird Road intersection. During rush-hour traffic, this intersection becomes a significant "bottleneck" and safety concern. For this reason, 73rd Street should be realigned slightly to the east. This realignment would provide sufficient separation between 73rd Street and Scottsdale Road and allow for the installation of a traffic signal at the newly relocated intersection, thereby improving traffic safety in the area.

LANDSIDE RELATED DEVELOPMENT COST COMPARISON

Table 5C, Landside Related Development Cost Comparison, compares "order of magnitude" development costs for the various development alternatives, as well as those cost associated with land acquisition. These costs reflect general estimates for site preparation and landside development and should be used for comparison purposes only.

83MP13-5E-2/28/97

76TH ST.

78TH ST.

THOMAS PARCEL ALTERNATIVE

CHOLLA PARCEL ALTERNATIVE

REY WEST PARCEL ALTERNATIVE

LEGEND:

① TERMINAL BUILDING

② AUTO PARKING

EXISTING PROPERTY LINE

ULTIMATE PROPERTY LINE

APRON AREA

APRON AREA

APRON AREA

BLAST FENCE

FRANK LLOYD WRIGHT BLVD.

ZORI-I

0 500 1000

SCALE IN FEET

TOURNAMENT PLAYERS CLUB SCOTTSDALE

GRANITE REEF AQUEDUCT

A8

BRL

A14

A17 A18

A7 A9 A10 A11 A12 A13 A15 A16

EXIST. WASHRACK/ PILOT'S LOUNGE

REIL

B7 B10 B13 B16

EXISTING 8251' X 75' RUNWAY

TAXILANE "CHARLIE"

VASI-2

REIL

C10

BRL

EMS

78TH WY.

BUTHERUS DR.

RAINTREE DR.

SCOTTSDALE

Exhibit 5E
COMMERCIAL SERVICE TERMINAL ALTERNATIVES

TABLE 5C
Landside Related Development Cost Comparison
Scottsdale Airport

DEVELOPMENT ITEM	DEVELOPMENT COSTS		
LAND ACQUISITION[1]			
Land Acquisition (Butherus, Airport Road, Thomas, Rey West, and the Keycor Parcels)	$7,750,000		
Subtotal	**$7,750,000**		
SOUTHSIDE DEVELOPMENT			
Conventional Hangars	$9,375,000		
T-hangars/shades	$3,080,000		
Taxilanes	$690,000		
Access Road (Airport Road and 73rd Street)	$182,000		
Auto Parking	$165,000		
Subtotal	**$13,492,000**		
T-HANGAR/SHADE DEVELOPMENT			
Alternative	One[1]	Two[1]	Three
Site Preparation	$120,000	$150,000	$150,000
T-hangars/Shades	$1,740,000	$2,300,000	$2,400,000
Taxilanes	$612,500	$700,000	$1,115,700
Subtotal	**$2,472,500**	**$3,150,000**	**$3,665,700**
COMMERCIAL SERVICE TERMINAL DEVELOPMENT			
Alternative	Cholla	Thomas	Rey West[1]
Site Preparation	$120,000	$150,000	$150,000
Utility Improvements	$250,000	$250,000	$250,000
Commercial Terminal Building	$1,300,000	$1,300,000	$1,300,000
Commercial Apron	$875,000	$875,000	$875,000
Auto Parking/Access Road	$300,000	$650,000	$610,000
Subtotal	**$2,845,000**	**$3,225,000**	**$3,185,000**
TOTAL RECOMMENDED DEVELOPMENT COST	**$30,049,500**		

Note: [1] Included in the Total Recommended Development Cost

SUPPORT FACILITIES

In addition to those development items previously discussed, various facilities that do not logically fall within the classifications of airside or landside need to be discussed. These facilities include the Airport Rescue and Firefighting (ARFF) facility, the Airport Traffic Control Tower (ATCT), the Airport Maintenance facility, and any potential non-aviation related development.

Airport Rescue and Firefighting Facility

The existing ARFF facility, located near midfield on the east side of the airport, is located appropriately. As discussed in the previous chapter, the current ARFF equipment would meet the anticipated requirements throughout the planning period. It is possible, however, that the existing semi-temporary structures that house the crew and equipment may be replaced by the City with a permanent structure during the planning period.

Airport Traffic Control Tower

Based on the type of aircraft operating at Scottsdale Airport, it is anticipated that the FAA operation of the ATCT will continue through the planning period. Currently, the Scottsdale ATCT is enhanced with the installation of "D-Brite" equipment. This equipment provides the Scottsdale ATCT controllers with radar data depicting the location and identification of aircraft operating to and from Scottsdale Airport. This enhancement also provides an improvement in overall airport capacity by allowing aircraft to arrive and depart Scottsdale Airport during instrument flight operations. Prior to the installation of the D-Brite equipment, instrument flight operations were conducted on a "one-in, one-out" basis. This means, that during IFR conditions one aircraft may arrive or depart Scottsdale Airport at a time until that the aircraft is "seen" on by Phoenix Tracon on radar or lands at the airport.

Airport Maintenance Facility

Currently, the airport maintenance facility occupies a portion of the City hangar complex. If these hangars remain through the planning period, it could be expected that additional maintenance space would be required. If this area is redeveloped with a conventional hangar, the maintenance equipment would need to be relocated to another facility. With the development of additional T-hangars and the commercial service terminal building on the northside of the airport, a new maintenance facility could potentially be located in one of these areas.

Non-Aviation Related Development

Parcels for non-aviation related development at Scottsdale Airport are very limited, due to the desire to accommodate as much aviation related development as possible. The exceptions, however, are the three parcels at the south end of the airport property. The first parcel is located south of Thunderbird Road and east of Scottsdale Road. This parcel would provide ideal frontage to Scottsdale Road or Thunderbird Road for the development of a non-aviation use. The realignment of 73rd Street provides for two additional parcels, both located north of Thunderbird Road and one on each side of the existing 73rd Street alignment. Due to the "natural" separation created by 73rd Street from the airport, these two parcels are also ideal for non-aviation related development. Because these parcels are located within the RPZ for Runway 3, recom-

mended development on these parcels would be an auto parking facility.

RECOMMENDED AIRPORT DEVELOPMENT

This chapter has attempted to outline alternative solutions to the key development issues at Scottsdale Airport. The recommended development plan for Scottsdale Airport includes the following items:

- Provide a 100 foot wide runway, maintaining the 750 foot displaced threshold on Runway 3 and displacing Runway 21 by 400 feet;
- Enhance airfield capacity by extending Bravo Taxiway and providing additional taxiway exits;
- Establish a GPS nonprecision approach to both runway ends;
- Develop general aviation facilities on the Cholla Parcel;
- Acquire the Thomas and Keycor Parcels for the development of general aviation facilities and acquire the Rey West Parcel for the development of a commercial service terminal area;
- Acquire the Butherus and Airport Drive Parcels for enhanced circulation and auto parking.
- Realign 73rd Street for enhanced automobile safety in the area.

A basic recommended development plan, illustrated in **Exhibit 5F, Recommended Airport Development,** has been proposed for Scottsdale Airport. Pending review of this chapter and input from the Planning Advisory Committee (PAC), the following chapters will present a refinement of this basic plan into a final Airport Layout Plan (ALP) set with recommendations and timing for the program.

DEVELOPMENT OF CONSTRAINED AVIATION FORECASTS

Based on the physical characteristics of the airport and the development recommendations, it was determined how much of the "unconstrained" forecast would be accommodated at Scottsdale Airport. Given the proposed development, it would appear that all of the forecast demand could be accommodated at Scottsdale Airport.

If no new development is provided, it is assumed that aircraft owners desiring hangars/shades may relocate to other airports in the area. Given this assumption, the number of based aircraft can be expected to decrease from the "unconstrained" forecast of 500 by the year 2015 to 430. In addition, it is anticipated that the "unconstrained" passenger enplanement level (98,000) could not be accommodated in the existing terminal building. It is estimated that the existing terminal building could be expected to accommodate only 40,000 annual enplanements.

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LEGEND:

1. TERMINAL BUILDING
2. T-HANGARS
3. CONVENTIONAL HANGAR
4. AUTO PARKING
5. NON-AVIATION RELATED DEVELOPMENT

EXISTING PROPERTY LINE

ULTIMATE PROPERTY LINE

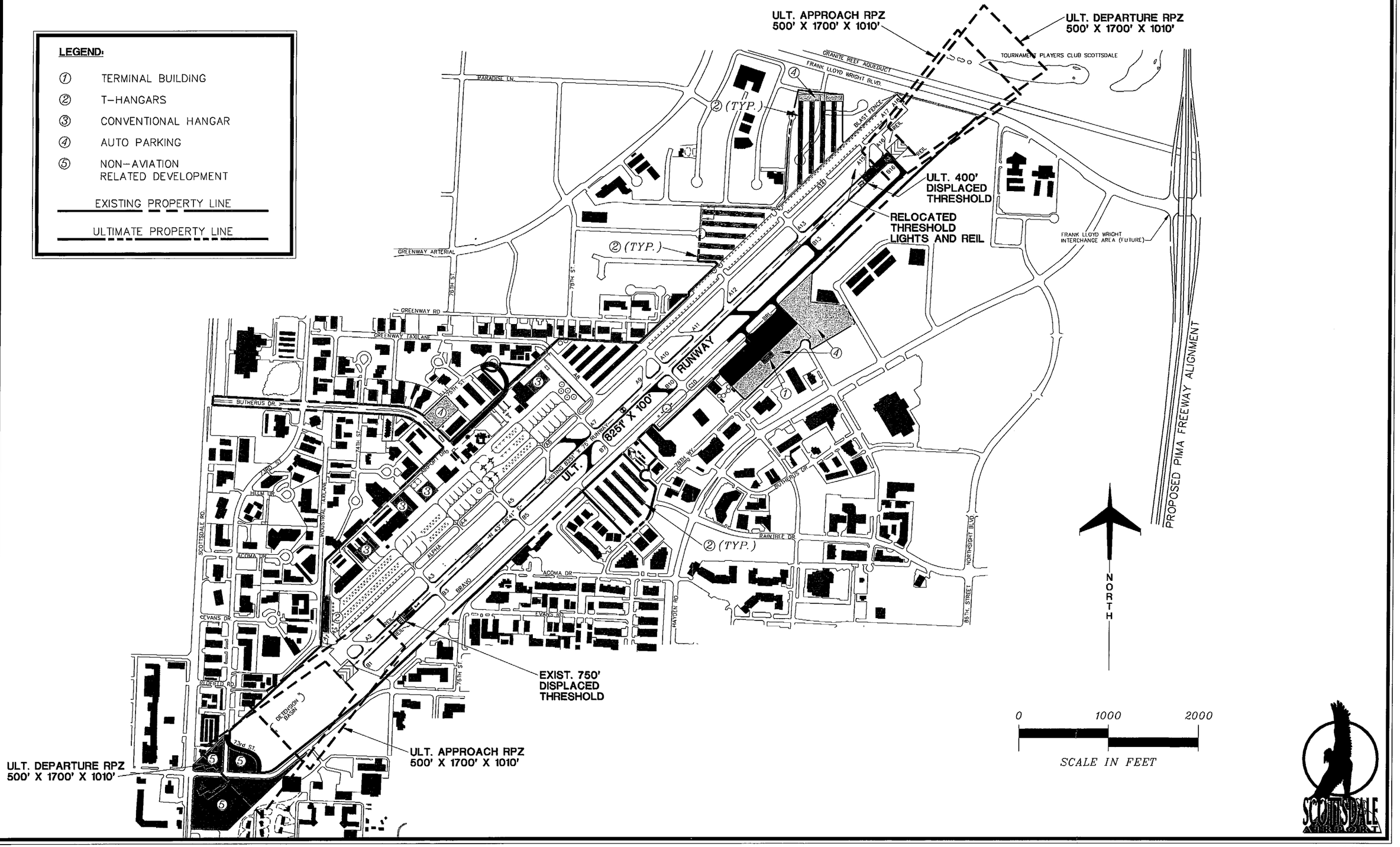

Exhibit 5F
RECOMMENDED AIRPORT DEVELOPMENT