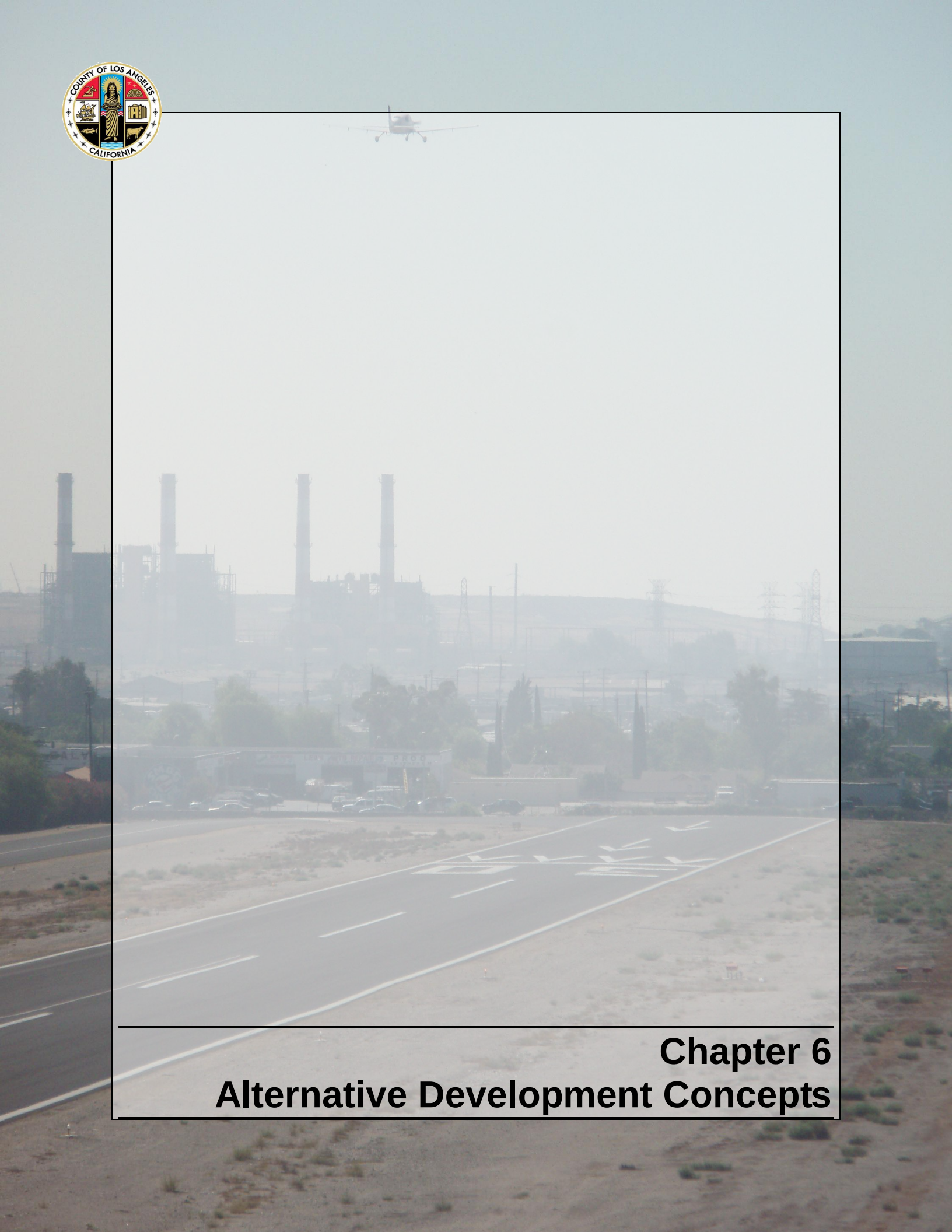

Chapter 6
Alternative Development Concepts

Chapter 6
Alternative Development Concepts

INTRODUCTION

This chapter, Alternative Development Concepts, describes the recommended development concept and the different development options that were evaluated. Once a preferred development concept is identified, the remaining tasks in the Master Plan Update are to define the concept through a series of airport layout drawings and implementation plan. The airport concepts as described herein are based upon the facility requirements discussed in Chapter 5 and the market assessment in Chapter 4. The concept defines in general terms, the different areas on-airport and the type of development, to organize the basic land uses and major on-airport facilities, which will ultimately promote the orderly development of the airport.

BASIS OF CONCEPT DEVELOPMENT

The recommended concept was influenced by four primary factors. These are 1) facility requirements derived from forecasts of aviation demand, 2) facility improvements to enhance safety, 3) providing a flexible plan that accommodates new aviation uses, and 4) the existing terrain at the airport. Since the development of the concept acknowledged these factors, it is believed the future recommended development will result in a plan that will satisfy future aviation demand, accommodate demand safely and efficiently, conform with FAA standards, and permit the airport to react to potential changes in demand within limitations imposed by the terrain.

EVALUATION CRITERIA

The goal of the concept alternatives analysis was to identify the appropriate airport development that best satisfies the following criteria:

- **Long Term Aviation Needs**: Conceptual plans must address the 20-year facility requirements identified in Chapter 5. Additionally, the plans must consider aviation needs beyond the year 2030. The airport should be a user-friendly aviation facility for personal and business travel and aviation public safety operations.

- **Safety of Aircraft Operations**: The future development should meet current FAA planning and design criteria if feasible, particularly those that enhance the safety of air operations.

- **Community and Environmental Compatibility**: The future development and operation of the airport must be sensitive to the environment and compatible with the surrounding community.

- **Flexibility to Accommodate Change**: The plans for future airport development must be flexible enough to accommodate changing needs that cannot be anticipated now.
- **Efficiency of Construction Phasing**: Construction of the proposed improvements should be implemented without interfering with existing operations.
- **Operational Efficiency**: The future development at the airport should be configured and located to maintain or enhance the operational efficiency of the airport.
- **Relative Financial Effectiveness**: Airport improvements must be cost-effective and be matched with the ability of the airport to fund the improvements, without subsidy from the County.

The alternative airport improvement concepts discussed below are prepared with the objective of satisfying these criteria.

NO ACTION

Figure 6-1 presents the "no action" alternative. There would be no changes to the existing airfield (runway/taxiways). Currently, full runway safety areas (RSAs), obstacle free zones (OFZs), and runway object free areas (ROFAs) are provided through the application of declared distances. Included within the RPZs are approximately 100 buildings, Pierce Street, and Osborne Street. The only changes included within this alternative are those currently being approved or previously approved by the County (County tie-down ramp, Cam-Trans/APIP 60, LLC hangars, Angel City Air, and Argubright Construction hangars).

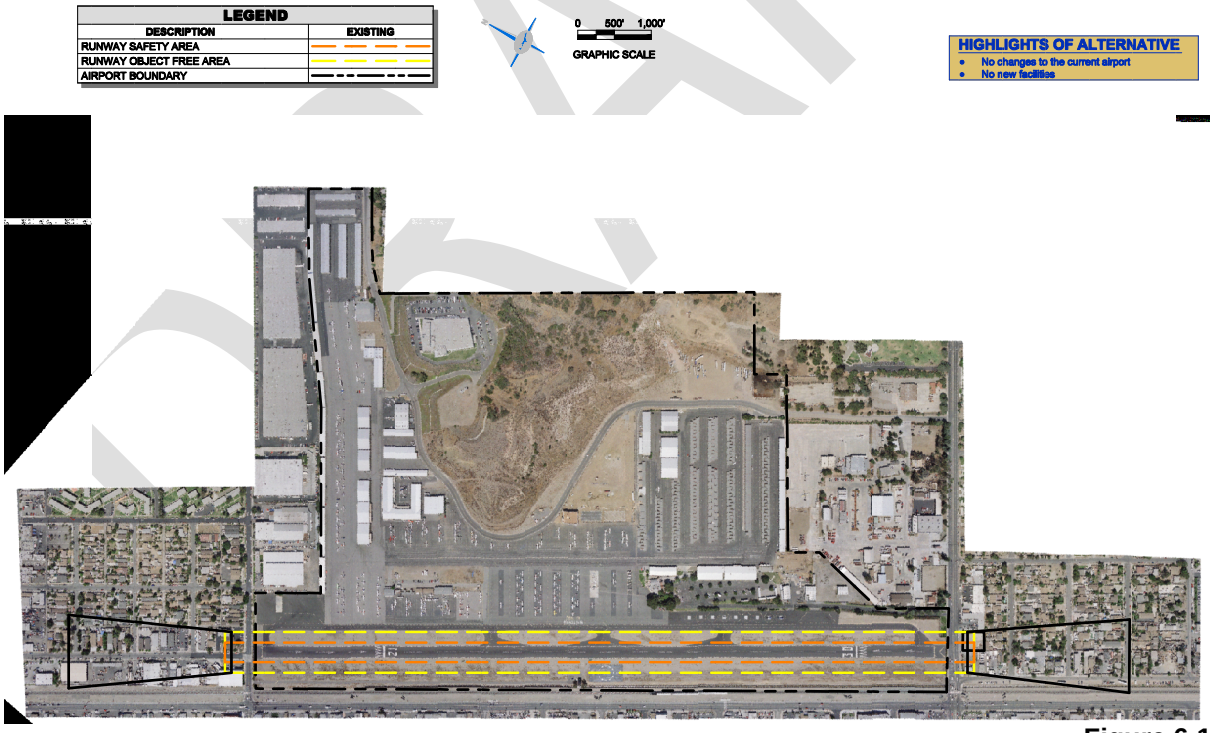

Figure 6-1
No Action Alternative

AIRSIDE ALTERNATIVES

As previously discussed, the airside includes the runway and taxiway system, the runway approach areas and the associated appurtenances such as airfield lighting, visual aids, and navigation aids. With the exception of aircraft aprons which, due to their interface with terminal facilities, are analyzed as a landside

element. Airside refers to those airport areas where aircraft operations are conducted. The following airside alternatives were created to accommodate future traffic demands safely and efficiently.

Capacity Enhancements

As discussed in Chapter 5, the airfield meets forecasted demand, but reaches a threshold where improvements should be planned before the airport becomes saturated. As was also discussed in Chapter 5, airport capacity can be affected by airfield improvements, airfield or airspace geometry, ATC procedures, weather, and mix of aircraft operating at the airport. Due to physical constraints at the airport, it is unlikely that the mix of aircraft, or the airfield geometry will significantly change at Whiteman. Airspace geometry is defined by the FAA and due to the complex airspace in the vicinity of LAX and Burbank, changes to the airspace are unlikely. Since weather is beyond control, the methods investigated to increase capacity at Whiteman were limited to: airfield geometry and ATC procedures. Consideration was given to increase the number of runway exits to decrease runway occupancy time and to increase the percentage of touch and go operations.

Whiteman currently qualifies for three runway exit credits during capacity analysis. A maximum of four runway exits are included in the airfield capacity circular; as more than four runway exits does not increase airfield capacity. Adding two additional perpendicular taxiways (one between Taxiways A and B and one between Taxiways D and A) will result in one additional runway exit for each runway end. Adding these taxiways produces a marginal increase in airfield capacity (see Table 6-1).

A marked increase in airfield capacity is noted when an increase of touch and go operations is included in the calculations. As previously noted, there has been a recent sharp decrease in touch and go operations at Whiteman. While it is unclear why the decrease occurred, through discussions with the County, airport management, airport traffic control tower staff, and Vista Aviation there seems to be nothing that would prevent a return of touch and go operations at Whiteman. Touch and go's typically account for about 50 percent of operations at a general aviation airport. Assuming that touch and go operations increase to previous levels (about 50 percent of operations) capacity at the airport will increase (see Table 6-1), thus reducing the need for physical improvements to the airport.

A maximum level of capacity enhancement would be reached if touch and go operations at the airport were to resume, and additional runway exits were constructed. Again, adding runway exits features relatively little capacity enhancement at Whiteman (see Table 6-1).

Table 6-1
ENHANCED AIRFIELD CAPACITY ALTERNATIVES

Description	Annual Service Volume	Capacity Utilized	Weighted Hourly Capacity	Capacity Utilized
Existing Conditions				
Demand (2030)	143,500	-	72	-
Capacity	219,000	66%	81	88%
Additional Runway Exits				
Capacity	224,500	64%	86	84%
Increased Touch and Go				
Capacity	279,300	51%	107	67%
Additional Exits and Increased Touch and Go				
Capacity	297,500	48%	114	63%

Source: AECOM Transportation analysis.

For the purpose of this master plan, the maximum level of capacity enhancements (additional runway exits and an increase of touch and go operations) is included as part of the following safety enhancement alternatives.

Safety Enhancements

A key goal is to eliminate the application of declared distances. The application of declared distances at a general aviation airport is undesirable to the FAA as it is a potential source of pilot confusion.

Alternative 1

To protect approaching and departing aircraft as well as the surrounding neighborhood, Alternative 1 suggests shortening the Runway to 3,768 feet. The Runway 12 threshold will be relocated southeasterly 185 feet and the Runway 30 threshold will be relocated northwesterly 167 feet. This results in displaced thresholds of 562 feet at Runway 12 and 293 feet at Runway 30. Shortening the runway will provide full RSA, OFZ, and ROFA within current airport property limits. The RPZs will continue to include incompatible land uses as they are traversed by several streets, contain residential areas, and contain commercial buildings. Runway 12 RPZ includes approximately 36 buildings (10 residences) and Runway 30 RPZ includes approximately 50 buildings (16 residences), which is an improvement over existing conditions. Alternative 1 is depicted on Figure 6-2.

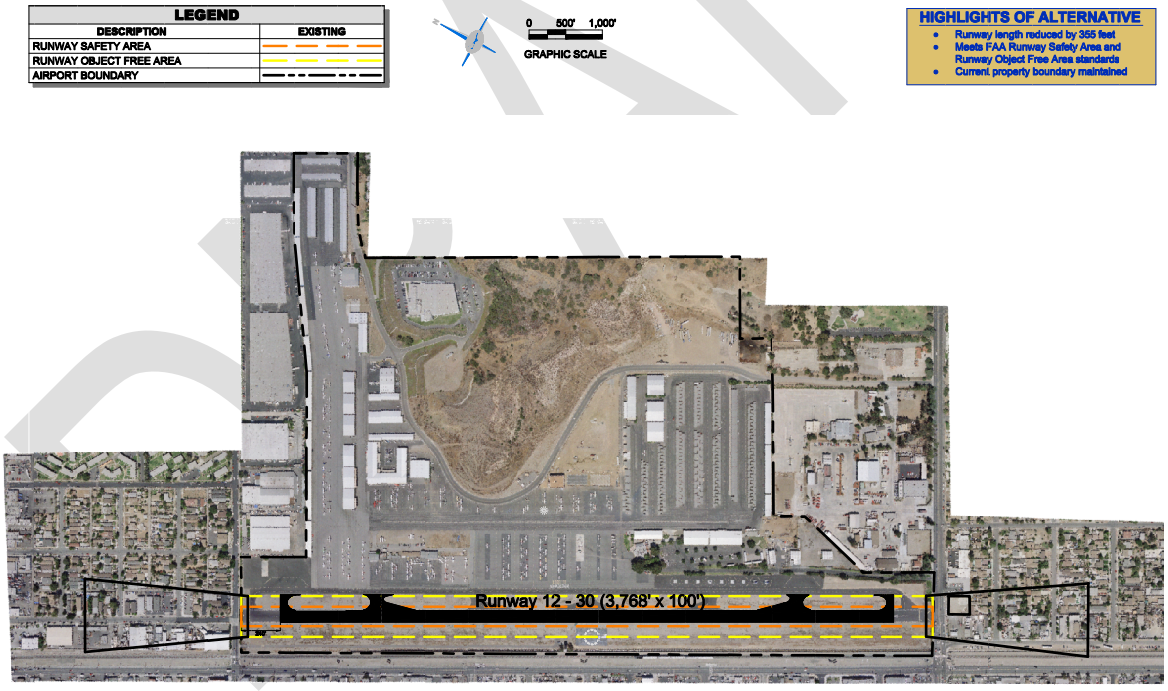

Figure 6-2
Airside Alternative 1 – Shorten Runway

Alternative 2

This alternative (Figure 6-3) suggests acquiring and clearing areas of RSA and ROFA which are off airport property. The areas to be acquired total approximately two acres, but to acquire this land, Osborne Street, Pierce Street, and Sutter Avenue would have to be closed or relocated. On the Runway 12 end the area to be acquired contains three residential properties and parts of a commercial property. The Runway 30 RSA and ROFA include one building and associated parking area that would be acquired. The runway length would remain 4,120 feet. The Runway 12 RPZ includes approximately 32 buildings (14 residences) and the Runway 30 RPZ includes approximately 35 buildings (15 residences). Alternative 2 features fewer buildings within the RPZs.

Figure 6-3
Airside Alternative 2 – Acquire ROFA

Alternative 3

Alternative 3 (see Figure 6-4) suggests acquiring and clearing full safety areas including RSA, OFZ, ROFA, and RPZ. The runway would remain 4,120 feet in length, but 17 acres of surrounding area would be acquired and cleared. This area includes approximately 43 buildings (16 residences), Sutter Avenue, Pierce Street, Jouett Street, Carl Street, and Hoyt Street on the Runway 12 end. The Runway 30 end, includes approximately 61 buildings (18 residences), Osborne Street, Wingo Street, Correnti Street, Bromwich Street, and San Fernando Road. This alternative recommends closing/relocation roads outside of RPZ limits. As an option, roads could be relocated underground.

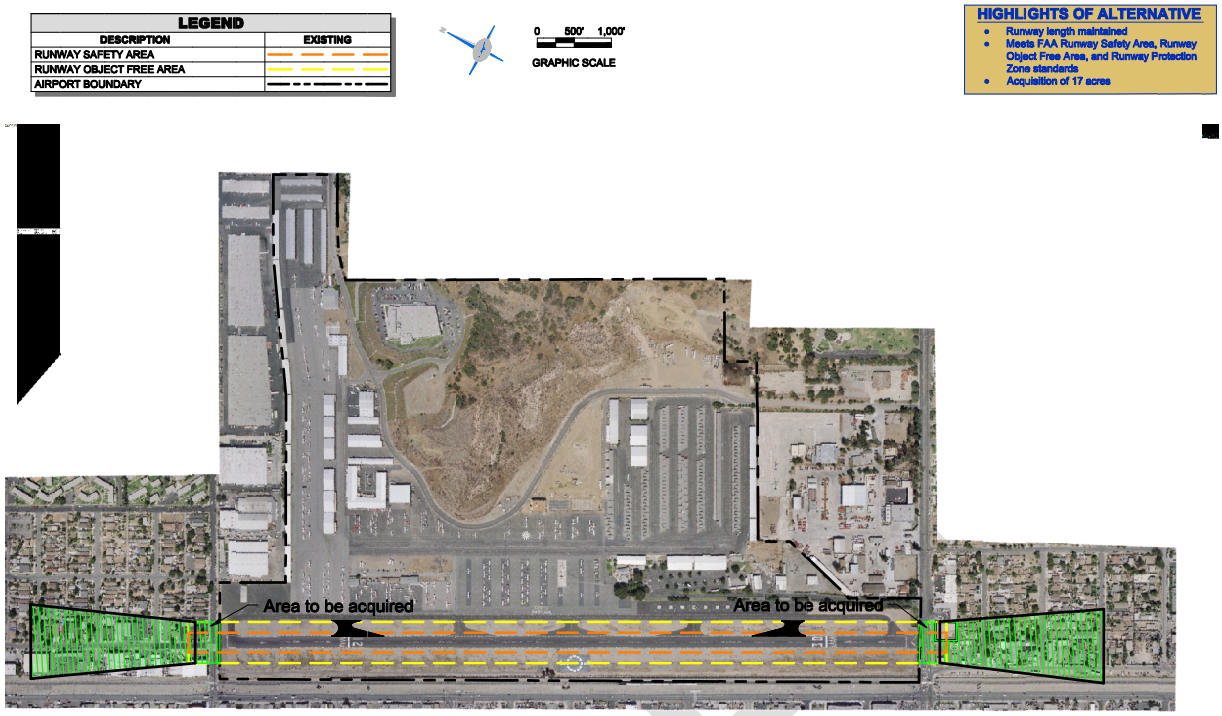

Figure 6-4
Airside Alternative 3 – Acquire RPZ

Evaluation of Airside Alternatives

Table 6-2 ranks the various airside alternatives against the evaluation criteria previously defined. A brief discussion of how the alternatives rank follows. As a reminder, all airside alternatives feature the capacity enhancement modifications outlined above (assumed return of touch and go operations and additional runway exits).

Airside Alternative 1 proposes to shorten the runway to accommodate RSA/OFZ/ROFA. The community would benefit as aircraft will be higher above noise sensitive areas near the runway ends. The project can be done efficiently as the runway would only be closed for a relatively short time during low-volume traffic times to repaint both runway ends. Similar type aircraft would be able to access the airport as the runway would only be 355 feet shorter than current conditions.

Airside Alternative 2 proposes to acquire the land within the RSA/OFZ/ROFA. While the acquisition of land is relatively minor, it may still negatively impact the land use, population, and housing in the area. The community would be affected by the acquisition of the land, as major roads (Pierce Street, Sutter Avenue, and Osborne Street) would be rerouted. Existing operations will not be affected by the acquisition of the land. Operations would be just as efficient as current conditions, as the runway length would remain the same. Relatively, this is the second most costly alternative, as land acquisition and rerouting of major roads will require significant capital.

Airside Alternative 3 proposed to acquire safety areas and RPZ on both runway ends. This alternative impacts the community as 17 acres of land would be acquired and will impact the land use, population, and housing in the area. A total of 104 buildings and ten roads would have to be relocated or removed/closed. The acquisition of the land would not interfere with the aircraft operations. Operational efficiency would remain the same as the current situation as the runway length is to remain the same. Financially, this is the most expensive alternative due to the land acquisition and removal of structures and rerouting of roads within the current ROFA/RSA/RPZ.

Table 6-2
AIRSIDE EVALUATION MATRIX

Criterion	No Action	Alternative 1	Alternative 2	Alternative 3
Long-Term Aviation Needs	Excellent – Runway length remains the same	Good – Slight reduction in runway length.	Excellent – Runway length remains the same.	Excellent – Runway length remains the same.
Safety of Aircraft Operations	Poor –RSA and ROFA are met through declared distance use; potential pilot confusion. RPZ remains the same.	Good – Meets FAA design standards for RSA and ROFA; slight RPZ improvement.	Good – Meets FAA design standards for RSA and ROFA; slight RPZ improvement.	Excellent – Meets FAA design standards for RSA, ROFA and RPZ.
Community and Environmental Compatibility	Excellent – Does not impact the community.	Excellent – Does not impact the community.	Poor – Road re-routing and residential acquisition.	Poor – 17-acre land acquisition includes 104 buildings and ten roads.
Flexibility to Accommodate Change	Good – Accommodates same mix of aircraft as currently found at the airport	Fair – Reasonably accommodates same aircraft that presently uses the airport. Slight decrease in ability for larger aircraft to use the facility.	Good – Accommodates same mix of aircraft as currently found at the airport	Good – Accommodates same mix of aircraft as currently found at the airport
Efficiency of Construction Phasing	Excellent – No changes planned.	Good – Minimal impacts to airport and neighboring community.	Poor – Traffic re-routing will cause significant delays.	Poor – Major road re-routing and residential displacement. Significant vehicle traffic delays.
Operational Efficiency	Poor – Weighted hourly capacity reaches 88% in 2030.	Excellent – Increased efficiency through increased operational capabilities.	Excellent – Increased efficiency through increased operational capabilities.	Excellent – Increased efficiency through increased operational capabilities.
Relative Financial Effectiveness	Excellent – No costs.	Good – Low costs for new entrance taxiways and striping.	Fair – Higher cost of 2-acre land acquisition.	Poor – Highest cost of 17-acre land acquisition.

Source: AECOM Transportation analysis.

Recommended Airside Alternative

Airside Alternative 1 is the recommended alternative. While this alternative does not rank highest in every category, it provides a good balance in enhancing the safety of airport operations with minimal impact to the surrounding community. In this alternative the runway length is reduced to remove the application of declared distances. The reduction in runway length results in less impacts to the surrounding community than found in other alternative.

The airside alternatives were presented at the first public open house, held on March 11, 2009. Attendees included tenants of the airport and residents from the surrounding community. During this meeting attendees were polled to learn which alternative they preferred. Attendees favored the "No Action" alternative first with Airside Alternative 1 coming in a close second. Prudent planning dictates that some action be taken in order to enhance the safety of the airport; therefore, Airside Alternative 1 remains as the selected airside alternative.

LANDSIDE ALTERNATIVES

The airport landside system is comprised of all facilities supporting the movement of goods between the community's ground transportation system and the airport's airside system, and also any facilities used in the maintenance or protection of those facilities. For Whiteman, these include general aviation terminal/administration building, aircraft storage and services, automobile parking, and airport support facilities. The landside elements, together with the previously discussed airside elements, form all of the airport development facilities required to accommodate the forecast level of traffic.

Development Areas

Prior to defining alternatives to meet landside facility requirements, it is important to define developable areas on the airport. Whiteman Airport is restricted in its development by surrounding land use areas and on airport constraints. On Figure 6-5 nine areas on airport property and two areas off airport property are identified for possible future landside development. The following discussion describes each development area and notes potential uses.

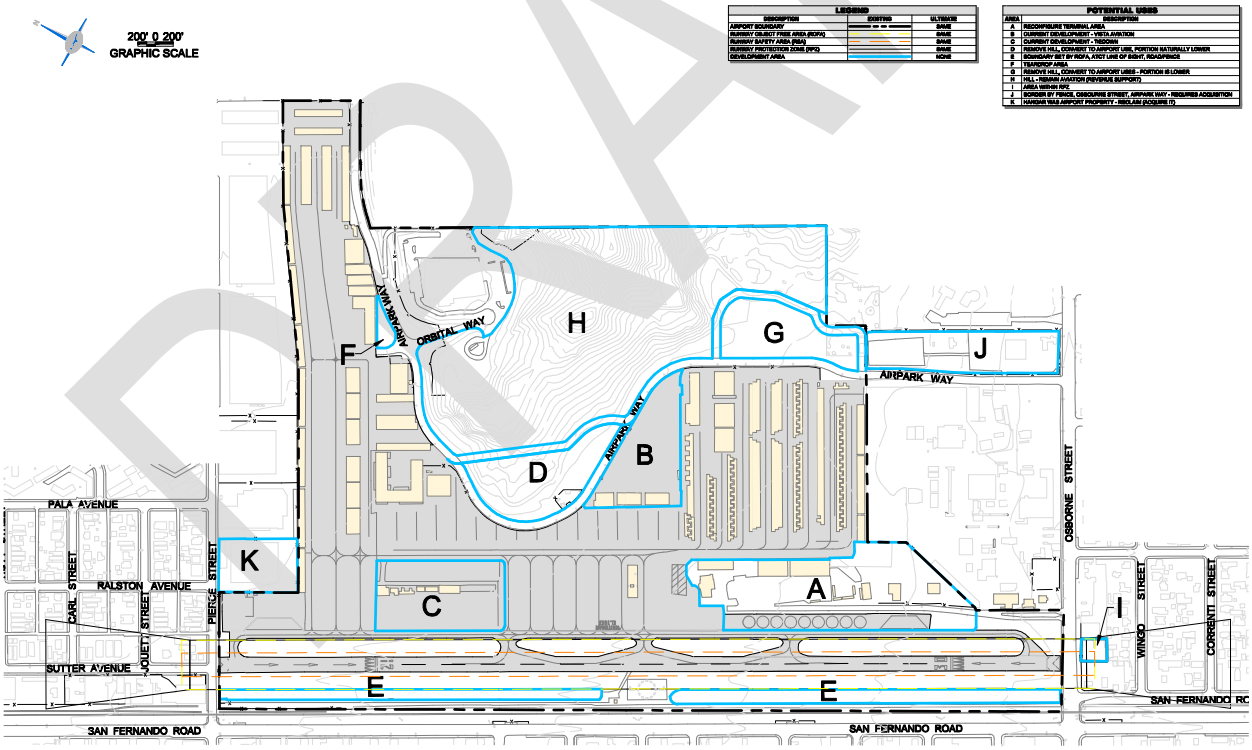

Figure 6-5
Land Development Areas

- **Development Area A.** Development Area A includes the current terminal area, helicopter pads, helicopter operating area, run-up apron, and small hangar/office/administrative buildings and covers approximately 11 acres of land. Current uses include the helicopter operating area, run-up apron, office space, and hangars. The development area A could be used for other aviation-related uses

such as the helicopter operating area, individual hangars for aircraft storage, terminal and restaurant area, and airport access.

- **Development Area B.** This area is a triangular-shaped plot of land along Airpark Way. It is currently under development by Vista Aviation and covers approximately 4.5 acres. The development plans include hangars and FBO offices. Vista Aviation's development utilizes the entire 4.5 acres.

- **Development Area C.** This area is adjacent to Taxiway A. Hangars, a flight school, and tie-downs were located on this land area. The hangars are presently being removed and the flight school has left the airport. Development plans for these five acres include removing all buildings and installing 70 tie-down spaces.

- **Development Area D.** The front of the hill along Airpark Way is identified as Development Area D. This area is currently not in use. Previous uses include a company that was removing dirt for fill material at other sites. For this area to be useful, the hillside would have to be graded and stabilized, incurring large costs to the development. After the grading, the area could be used for any airport or revenue supporting use. This area has previously been designated as the site for a new terminal building. Other potential uses include a helicopter operating area, hangar development, tie-down area, and a relocated fuel facility location.

- **Development Area E.** Development Area E is split up into two strips of land located on the south side of the runway beyond the runway obstacle free area (ROFA) and Airport Traffic Control Tower (ATCT) line of sight. The land, parallel to the runway, is open space but could be designated aviation use area. This aviation use area is limited due to its location. Additionally airport facilities (including fuel, wash-racks, oil recycling, etc.) are located on the other side of the runway and frequent crossing of the runway to use these facilities poses a runway incursion potential. A taxiway could not be built on this side of the runway, as there is not enough space to accommodate runway-taxiway separations. A potential use is to set up tie-downs for derelict aircraft in this area. The tie-down area could only support uses where active aircraft are not located, because movements within this area would require closure of the runway.

- **Development Area F.** This teardrop-shaped parcel is located along Airpark Way near Orbital Way. The area is currently open space, but could be used for automobile parking, designated aviation use or designated as revenue support area.

- **Development Area G.** Area G is east of the County T-hangars across from Airpark Way. This area is currently being used for equipment storage and dirt is being moved. This open area could be used for aviation or airport revenue support area. Specifically, the area could serve as a terminal area or helicopter operating area. In addition, it could accommodate hangar space, automobile parking, and tie-downs.

- **Development Area H.** This is the largest development area encompassing the hill except for Orbital Way and the existing manufacturing company located on the hill. Development of this area would require significant grading and stabilization of the hill, incurring high costs. It is suggested that development H remain aviation related or revenue supporting land use. Potential non-aviation uses are limited due to the terrain but may include a restaurant, park, museum, or nature center.

- **Development Area I.** Development Area I is a rectangular area of land not connected to the rest of the airport property. It is located along Osborne Street and is mostly within the Runway 30 runway protection zone (RPZ). This parcel is segregated from the airport by Osborne Street. Use of this parcel is limited by criteria set forth in the AC 150/5300-13 for RPZ land. Prohibited uses of the RPZ include residences and places of public assembly (including churches, schools, hospitals, office buildings, shopping centers, etc.). Furthermore, fuel storage facilities and areas that attract wildlife are not permitted within the RPZ. Since this area is within the RPZ, it should remain as open space.

- **Development Area J.** Area J is a 5.9 acre rectangular parcel off airport property along Airpark Way and Osborne Street, adjacent to the Los Angeles County Fire Station. In order to utilize this area, the county would need to acquire it. The property is fenced and could be used for aviation or revenue support. The area currently has three large buildings on it and seems to primarily be used for storage of equipment.

- **Development Area K.** Development Area K is another rectangular shaped area off airport property, and encompasses 2.5 acres. It is located northeast of the airport along Pierce Street. The parcel includes a large hangar building, a smaller building, and automobile parking facilities. Consideration may be given to reclaim/acquire this piece of land to use it for aviation use. Potential uses include hangar development, automobile parking, and non-aviation uses.

Helicopter Operating Area

There are several helicopter operators located at Whiteman. Currently, operators are scattered around the airport. Generally, it is desirable to co-locate all helicopters into one area to minimize mixing of helicopters and fixed wing aircraft.

Potential helicopter operating areas have previously been identified as landside Development Areas A, D, G, or H. Area A includes the nine helipads, run-up apron, terminal building, and small hangars. The majority, helicopters operate out of this area and it has always been envisioned to be the consolidated helicopter area at the airport. Development Area D is located at the base of the hill which would require significant grading. This area is open space and if used, could increase potential growth by opening up current space used by helicopters for fixed wing aircraft use. Also, helicopter noise would be centered on the airport, minimizing impacts to the surrounding community. Development Area G could be used as a remote helicopter area. However, this would bring the associated noise much closer to the residences northeast of the airport. The hill, Area H, is another area that could be used as a helicopter operating area. Similar to Area G, this area is closer to residences and could have a negative noise impact on the surrounding community.

Currently, helicopter operators use approximately 8,100 square feet of hangar space distributed around the airport. There are nine heliports including one transient heliport. Within the planning period, it is expected that helicopters will use approximately 14,600 square feet of conventional hangar space.

Operational concerns regarding the existing helicopter operating area are that it is within the movement area and helicopters have the same traffic pattern as fixed wing aircraft. However, if the helicopter operating area were to be moved to a remote location, there would be no ATCT visual feedback and the new traffic pattern could interfere with the Los Angeles County Fire Department helicopter operations.

Compass Rose

The Advisory Circular 150/5300-13 details requirements for a compass rose (also known as a compass calibration pad) locations as follows:

- At least 300 feet from power and communication cables (both above and below ground) and from other aircraft
- At least 600 feet from large magnetic objects such as buildings, railroad tracks, high voltage electrical transmission lines, or cables carrying direct current
- Located off the side of a taxiway or runway a sufficient distance to satisfy the runway and taxiway clearances applicable to the airport on which it is located
- After site selection, a thorough magnetic survey of the site should be conducted
- The difference between magnetic and true north must be uniform in the vicinity of the site

A review of the current airport layout was conducted based on the above criteria. It was discovered that there are no appropriate locations for a compass rose to be located without significant magnetic deviations due to buildings, power lines, railroad tracks or other aircraft.

Alternatives to meet Facility Requirements

The alternatives described below were developed to meet year 2030 landside facility requirements noted in Chapter 5. In summary, the alternatives seek to provide:

- 7,920 square feet of general aviation terminal space including offices and meeting rooms
- 34 transient tie-downs
- 554 individual hangar spaces
- 45,690 square feet of fixed wing conventional hangar space
- 14,580 square feet of helicopter conventional hangar space
- 290 based aircraft tie-downs
- 234 automobile parking spaces

Development is divided into three phases. Phase 1, or the short-term phase, encompasses the first five years (through 2013). The intermediate phase – Phase 2 – is for years 2014 through 2018. Phase 3 represents the long-term phase and includes years 2019 through 2030. These phases match the forecast years presented in Chapter 4. Table 6-3 depicts the additional facilities required by phase. These facilities are in addition to present facilities, as documented in Chapter 3.

Table 6-3
ADDITIONAL FACILITY REQUIREMENTS BY PHASE

Item	Phase 1 (through 2013)	Phase 2 (2014 – 2018)	Phase 3 (2019 – 2030)
General Aviation Terminal (SF)	3,470	3,910	5,120
Based Aircraft Tie-Downs	15	32	78
Transient Tie-Downs	16	19	25
Individual Hangar Spaces	25	58	147
Conventional Hangar Space – Fixed Wing (SF)	0	0	8,825
Conventional Hangar Space – Helicopter (SF)	4,050	4,050	6,480
Automobile Parking Spaces	34	47	82

Source: AECOM Transportation analysis.

Alternative 1

Alternative 1 at Whiteman Airport (Figure 6-6) will meet and exceed facility requirements for the forecasted 2030 demand. The terminal is relocated to Development Area D and the existing helicopter operating area is reconfigured/consolidated. This alternative suggests acquiring Development Area K (2.5 acres) in fee. The existing building on the property will be converted to a conventional hangar for fixed wing aircraft use and automobile parking will be provided adjacent to the building.

Phase 1: Development Area D is proposed to be graded and the hill stabilized. This area will become the new terminal area allowing for an approximately 8,000 square foot terminal, 4,000 square foot restaurant, picnic area, and 93 automobile parking spaces. Airpark Way is rerouted to accommodate the terminal. New tie-downs (13 based and 28 transient) are provided adjacent to the terminal along with an area for airport support vehicles. The terminal area development is completed in Phase 1. Adjacent to the new terminal area and the U.S. Marshall Hangar, five hangar buildings and automobile parking will be constructed. Development Area C will be transitioned from its current layout to a total of 70 tie-downs (a net increase of 29 tie-downs). To

meet short-term requirements, a new conventional hangar should be built in the current terminal/helicopter operating area. Within the short-term, five hangar buildings will be completed in the current terminal/helicopter operating area. Development Area F is developed to accommodate automobile parking.

Phase 2: The current terminal/helicopter operating area (Development Area A) would be reconfigured to accommodate a consolidated helicopter operating area and based aircraft hangars. One conventional hangar (in addition to the one in Phase 1), 10 hangar buildings (49 individual hangars), and automobile parking are accommodated in Development Area A. The Airport Entrance Road would be rerouted to allow for direct airside access for all aircraft operating in this area. The helicopter operating area in this alternative provides 161,664 square feet of combined hangar and apron space. In addition, a weather sensor (AWOS/ASOS) is proposed near the tower.

Phase 3: Development Area G will be graded to accommodate portable and individual hangars as well as additional automobile parking for tenants. Furthermore, tie-downs for derelict aircraft are planned on the opposite side of the runway, adjacent to the railroad tracks and San Fernando Road. Full apron area is not required, rather tie-down cables (anchored in concrete) could be provided. It is estimated that approximately 24 tie-downs can be accommodated here. Moving aircraft to and from this area will results in a temporary shut-down of the runway. Of the existing tie-downs by the terminal, an additional six will be designated transient tie-downs to meet long-term requirements. This phase also includes the acquisition of Development Area K to provide additional automobile parking and a fixed wing conventional hangar (49,100 square feet). Individual hangars (16) will be placed throughout the County hangar area to more efficiently use airport property.

The fuel farm is expected to maintain its location and Development Area H (the main portion of the hill) is proposed to be designated non-aviation use area. The hill covers approximately 33 acres of land. Additionally, hangars will be added into the County hangar development.

Alternative 1 meets and exceeds short, intermediate, and long-term aviation needs. The table below shows 2030 facility requirements and provided facilities in this alternative.

Item	Required (2030)	Provided
General Aviation Terminal	7,920 SF	8,040 SF
Restaurant	4,000 SF	4,040 SF
Tie-Downs	324	325
Individual Hangars	554	572
Conventional Hangars (Fixed Wing)	45,850 SF	101,625 SF
Conventional Hangars (Helicopters)	14,580 SF	30,670 SF
Automobile Parking	234	267

Source: AECOM Transportation analysis.

Alternative 2

Landside Alternative 2 meets facility requirements for the 2030 demand. This alternative relocates the helicopter operating area to Development Area D and the terminal to Development Area G. In addition, Development Area J (approximately 5.9 acres) will be acquired and used mostly for non-aviation use. The northern end of the area will accommodate the relocation of Airpark Way and airside automobile parking. This alternative is depicted on Figure 6-7.

Phase 1: Development Area G is shown as a remote terminal area. Acquisition of Development Area J supports the remote terminal and provides opportunities for aviation related uses. This

200' 0 200'
GRAPHIC SCALE

FACILITIES TABLE				
DESCRIPTION	EXISTING	PROVIDED (TOTAL)	REQUIRED (2030)	DIFFERENCE
INDIVIDUAL HANGARS	444	572	554	18
TIE-DOWNS*	220	325	324	1
CONVENTIONAL HANGARS (FIXED WING)	36,885 SF	101,625 SF	45,650 SF	55,975 SF
CONVENTIONAL HANGARS (HELICOPTER)	8,100 SF	30,670 SF	14,580 SF	16,190 SF
TERMINAL	2,800 SF	8,040 SF	7,920 SF	120 SF
RESTAURANT	2,730 SF	4,040 SF	4,000 SF	40 SF
AUTOMOBILE PARKING	152	267	234	33
* DERELICT AIRCRAFT TIE-DOWNS NOT INCLUDED				

LEGEND	
DESCRIPTION	SYMBOL
INDIVIDUAL HANGARS	
TIE-DOWNS	
TIE-DOWNS FOR DERELICT AIRCRAFT	
CONVENTIONAL HANGARS	
TERMINAL	
RESTAURANT	
NON-AVIATION USE	
AUTOMOBILE PARKING	
ACQUIRE IN FEE	
HELICOPTER OPERATING AREA	
PICNIC AREA	
WEATHER SENSOR	
ROAD	
FENCING	

HIGHLIGHTS OF ALTERNATIVE

- Exceeds 2030 requirements
- New Terminal Area approximately midfield
- Consolidated Helicopter Operating Area
- Expanded hangar area
- 2.5 acres of land acquisition

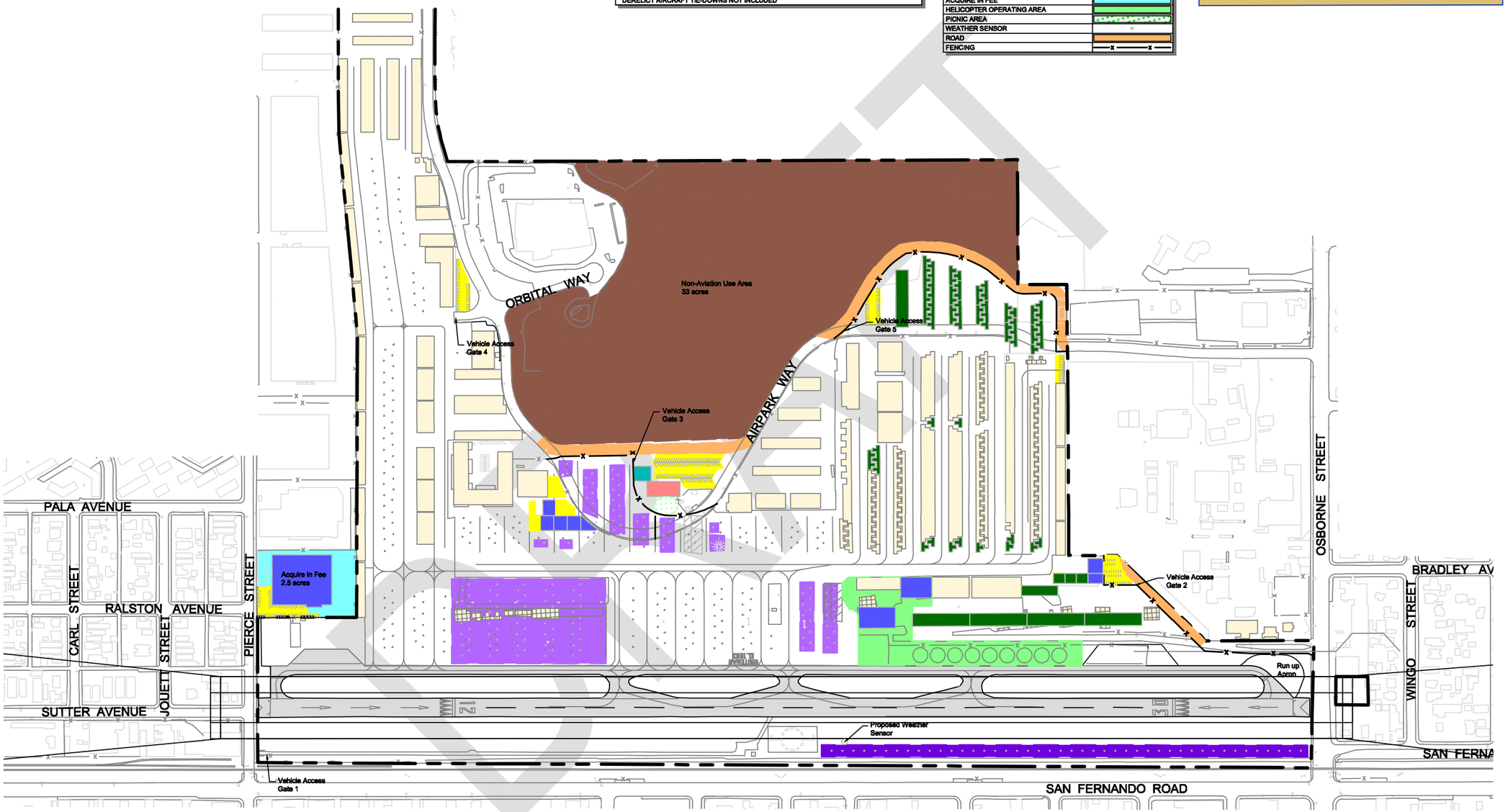

Figure 6-6
Landside Alternative 1

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GRAPHIC SCALE

FACILITIES TABLE				
DESCRIPTION	EXISTING	PROVIDED (TOTAL)	REQUIRED (2030)	DIFFERENCE
INDIVIDUAL HANGARS	443	580	554	6
TIE-DOWNS*	220	324	324	0
CONVENTIONAL HANGARS (FIXED WING)	36,865 SF	57,266 SF	45,650 SF	11,616 SF
CONVENTIONAL HANGARS (HELICOPTER)	8,100 SF	25,214 SF	14,580 SF	10,634 SF
TERMINAL	2,800 SF	8,040 SF	7,920 SF	120 SF
RESTAURANT	2,730 SF	4,040 SF	4,000 SF	40 SF
AUTOMOBILE PARKING	152	349	234	115
* DERELICT AIRCRAFT TIE-DOWNS NOT INCLUDED				

LEGEND	
DESCRIPTION	SYMBOL
INDIVIDUAL HANGARS	
TIE-DOWNS	
TIE-DOWNS FOR DERELICT AIRCRAFT	
CONVENTIONAL HANGARS	
TERMINAL	
RESTAURANT	
NON-AVIATION USE	
AUTOMOBILE PARKING	
ACQUIRE IN FEE	
HELICOPTER OPERATING AREA	
PICNIC AREA	
WEATHER SENSOR	
ROAD	
FENCING	

HIGHLIGHTS OF ALTERNATIVE

- Meets 2030 requirements
- New remote Terminal Area
- Expanded based aircraft facilities
- Two fuel facilities
- Acquire 5.9 acres - potential aviation related use

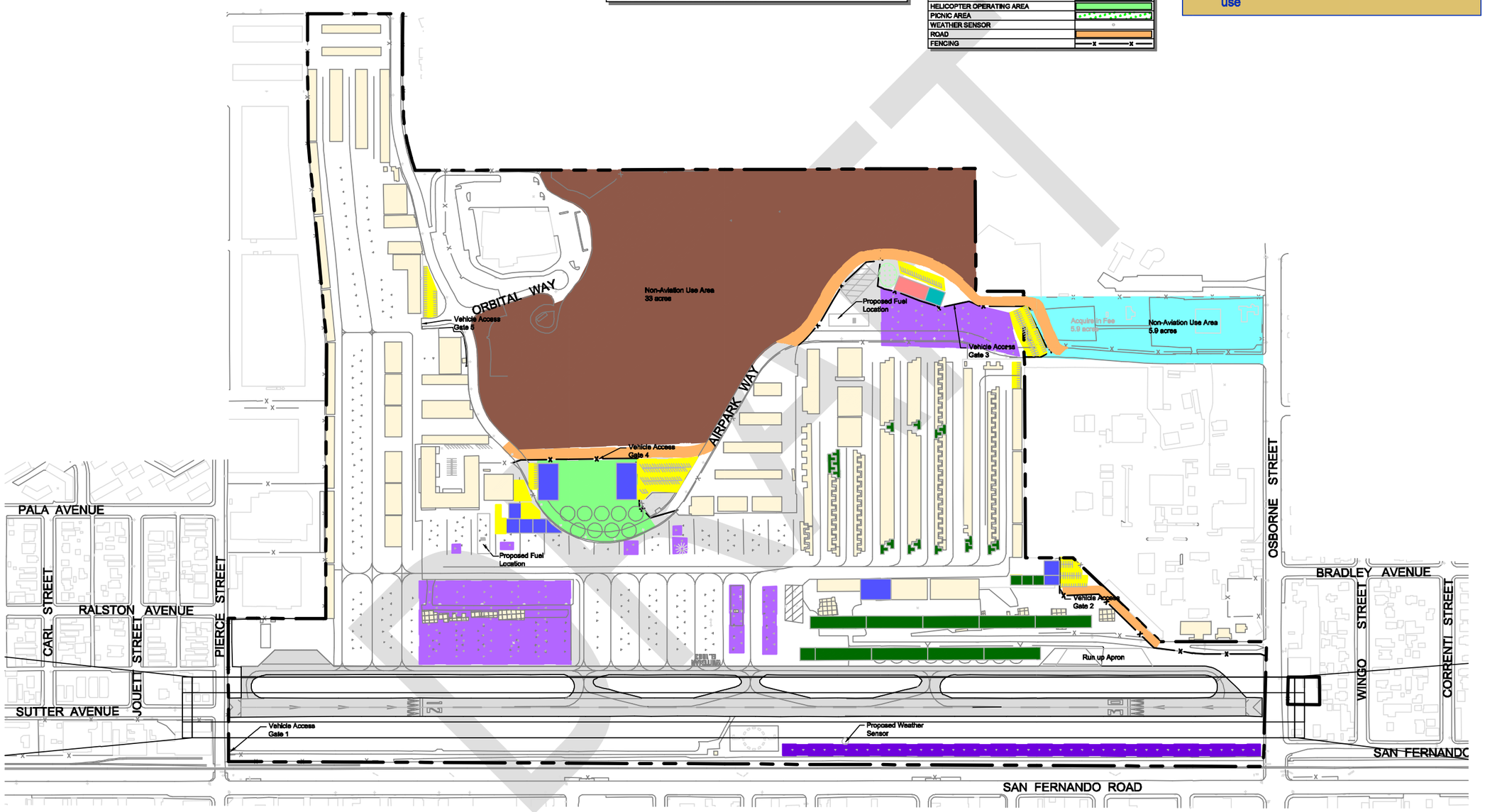

Figure 6-7
Landside Alternative 2

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alternative proposes 8,000 square feet for the terminal and 4,000 for a new restaurant. A picnic area as well as automobile parking will be located near the terminal. The rest of this area is designated for tie-downs, a second fuel farm, and parking for airport support vehicles. Development Area C will be modified from its current layout to tie-downs. In the current terminal area, one conventional hangar should be built to meet short-term requirements. This phase also includes relocating the existing fuel facility near the U.S. Marshall hangar. Development Area F will accommodate automobile parking.

Phase 2: Phase 2 suggests grading and stabilizing the hill in Development Area D to provide for a consolidated helicopter operating area. All nine heliports will be relocated into this area and it will include two conventional hangars (approximately 12,600 square feet each). Automobile parking and apron space will also be provided for tenants, customers, and visitors. The area is centralized on the airport and the hill will help to shield the community from helicopter noise. Near the U.S. Marshall hangar five additional buildings will be constructed. The area adjacent to and north of the terminal (including where the fuel farm used to be) will include additional tie-downs. To meet forecasted individual hangar demand, T-hangars are suggested to be built intermittently throughout the County hangar area. In addition, five hangar buildings in Land Development Area A will be completed. A total of 126,631 square feet of helicopter hangar and apron space is provided in this alternative.

Phase 3: Transforms the existing helicopter operating area and terminal area to based aircraft storage (individual hangars). The Airport Entrance Road is relocated along the property line, ending in a parking lot. The remaining area allows for additional conventional and individual hangar space as well as a larger run-up apron for Runway 30. A weather sensor is proposed near the segmented circle.

Similar to Alternative 1, Development Area E can accommodate tie-downs for derelict aircraft. Approximately 24 tie-downs are provided. Development Area H will be used for non-aviation uses. Additionally, hangars will be added into the County hangar development. Alternative 2 meets and exceeds short, intermediate, and long-term forecasted demand.

Item	Required (2030)	Provided
General Aviation Terminal	7,920 SF	8,040 SF
Restaurant	4,000 SF	4,040 SF
Tie-Downs	324	324
Individual Hangars	554	560
Conventional Hangars (Fixed Wing)	45,850 SF	57,268 SF
Conventional Hangars (Helicopters)	14,580 SF	25,214 SF
Automobile Parking	234	349

Source: AECOM Transportation analysis.

Alternative 3

Alternative 3 (Figure 6-8) meets long-term aviation needs for 2030 requirements and does not propose to acquire land. This alternative transforms Development Area G into a helicopter operating area, expand the current terminal area, and grading of Development Area D to provide additional individual based aircraft hangars.

Phase 1: Transform Development Area G into a helicopter operating area. The area will include nine heliports, two conventional hangars, and automobile parking. In addition, to meet short-term terminal requirements, the terminal building will be expanded at its current location to allow approximately 12,000 square feet for a combined terminal and restaurant. Development Area F will accommodate automobile parking. Also, Development Area C is redeveloped as a tie-down

ramp (70 tie-downs provided). Phase 1 development meets short-term requirements and provides 174,663 square feet of total helicopter operating area.

Phase 2: After the new helicopter operating area is in use, the current helicopter operating area can be reconfigured. The plans include rerouting the Airport Entrance Road, adding automobile parking spaces to meet forecasted requirements, expanding the run up apron, constructing two conventional hangars (12,600 and 10,700 square feet) and tie-down facilities. Individual tie-downs, portables, and automobile parking spaces are proposed to be installed as infill throughout the airport property.

Phase 3: This Phase is the most costly and time-consuming. This phase grades and stabilizes the hill area in Land Development Area D, reroutes Airpark Way and uses the additional land gained to add individual and portable hangars. Approximately 44 individual and portable hangars are estimated to be accommodated within the graded area. Five new buildings will be constructed adjacent to the U.S. Marshal hangar. A weather sensor is proposed on the tower side of the airport near other weather sensing equipment. South of the tower is an area designated to store derelict aircraft.

Item	Required (2030)	Provided
General Aviation Terminal	7,920 SF	8,154 SF
Restaurant	4,000 SF	4,077 SF
Tie-Downs	324	334
Individual Hangars	554	569
Conventional Hangars (Fixed Wing)	45,850 SF	57,350 SF
Conventional Hangars (Helicopters)	14,580 SF	21,628 SF
Automobile Parking	234	252

Source: AECOM Transportation analysis.

Alternative 4

Alternative 4 (Figure 6-9) meets and exceeds facility requirements for 2030. This alternative is a compilation of the first three alternatives. The three main development locations features of this alternative are the terminal in Development Area D, a new remote helicopter operating area in Development Area G and based aircraft facilities (hangars) in Development Area A. In comparison to the other three alternatives, Airpark Way is suggested to be modified only in one place – to cut across the hill at Development Area D. Since helicopters do not require direct airfield access, the helicopter operating area (Development Area G) does not need to be graded to match the existing hangar development adjacent to Airpark Way. Therefore, the other alternatives require more extensive grading. Similarly, since direct airfield access is not required, Airpark Way does not need to be relocated.

Phase 1: The first phase is similar to Phase 1 for Alternative 1 Development Area D is proposed to be graded and the hill stabilized. This area will become the new terminal area allowing for an approximately 8,000 square foot terminal, 4,000 square foot restaurant, picnic area, and 93 automobile parking spaces. Airpark Way is rerouted to accommodate the terminal area. New tie-downs are provided adjacent to the terminal (13 based and 28 transient). The new terminal area is completed in Phase 1. Development Area C will be transitioned from its current layout to a total of 70 tie-downs. In addition, it is suggested that individual hangars and parking designations be built as infill throughout the airport. In addition, construction on five buildings and automobile parking adjacent to the U.S. Marshal hangar will begin.

Phase 2: The second phase of this project incorporates parts of Phase 1 from Alternative 3. Development Area G is to be developed as a remote helicopter operating area. This area will

200' 0 200'
GRAPHIC SCALE

FACILITIES TABLE				
DESCRIPTION	EXISTING	PROVIDED (TOTAL)	REQUIRED (2030)	DIFFERENCE
INDIVIDUAL HANGARS	443	558	554	4
TIE-DOWNS*	220	334	324	10
CONVENTIONAL HANGARS (FIXED WING)	36,865 SF	57,350 SF	45,650 SF	11,700 SF
CONVENTIONAL HANGARS (HELICOPTER)	8,100 SF	21,628 SF	14,580 SF	7,048 SF
TERMINAL	2,800 SF	8,040 SF	7,920 SF	120 SF
RESTAURANT	2,730 SF	4,040 SF	4,000 SF	40 SF
AUTOMOBILE PARKING	152	262	234	28
* DERELICT AIRCRAFT TIE-DOWNS NOT INCLUDED				

LEGEND	
DESCRIPTION	SYMBOL
INDIVIDUAL HANGARS	
TIE-DOWNS	
TIE-DOWNS FOR DERELICT AIRCRAFT	
CONVENTIONAL HANGARS	
TERMINAL	
RESTAURANT	
NON-AVIATION USE	
AUTOMOBILE PARKING	
ACQUIRE IN FEE	
HELICOPTER OPERATING AREA	
GRASS/RECREATION AREA	
WEATHER SENSOR	
ROAD	
FENCING	

HIGHLIGHTS OF ALTERNATIVE

- Meets 2030 requirements
- Remote Helicopter Operating Area
- Expand existing terminal facilities
- Increase based aircraft parking in current helicopter area

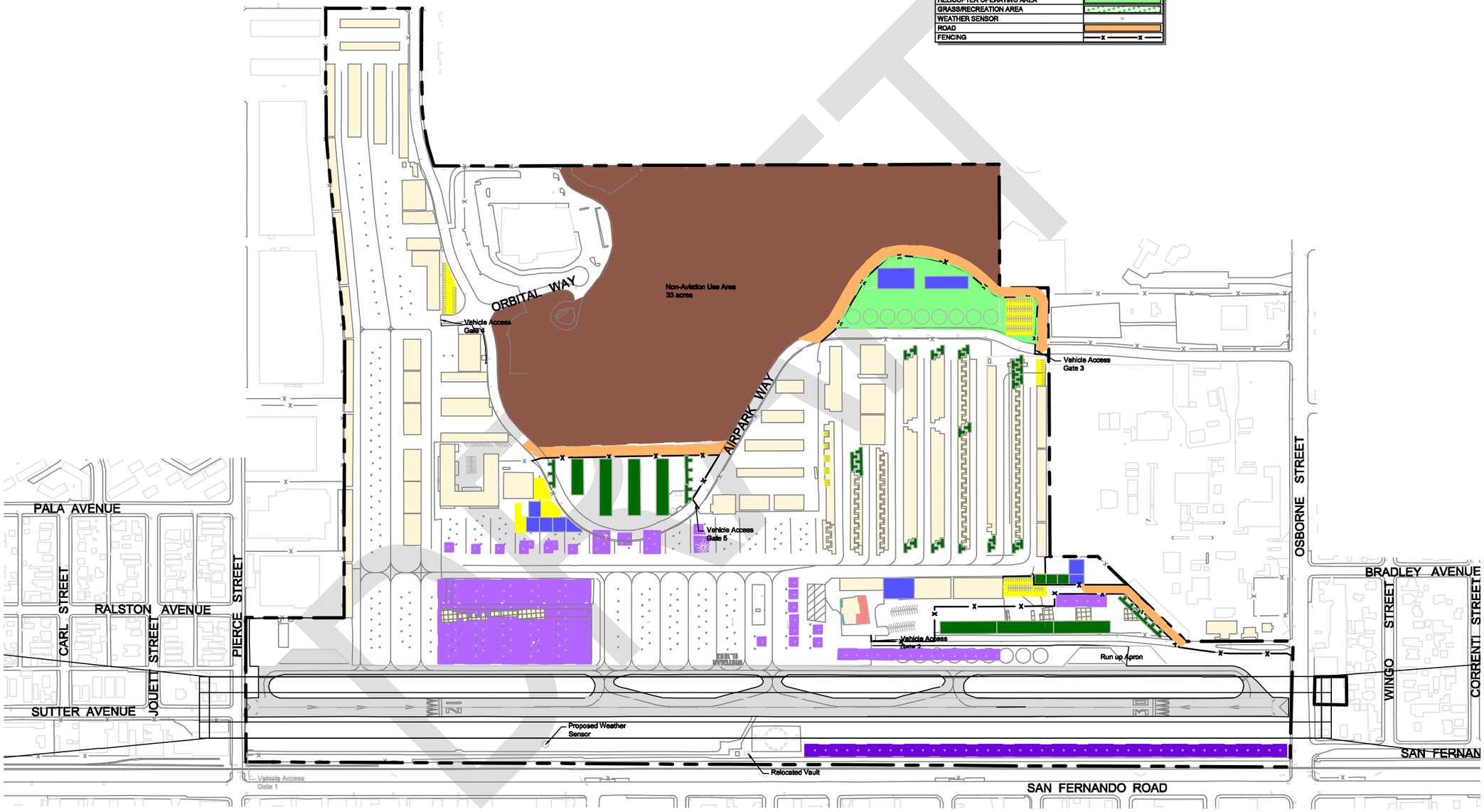

Figure 6-8
Landside Alternative 3

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200' 0 200'
GRAPHIC SCALE

FACILITIES TABLE				
DESCRIPTION	EXISTING	PROVIDED (TOTAL)	REQUIRED (2030)	DIFFERENCE
INDIVIDUAL HANGARS	444	589	554	15
TIE-DOWNS*	220	325	324	1
CONVENTIONAL HANGARS (FIXED WING)	36,865 SF	83,128 SF	45,650 SF	17,478 SF
CONVENTIONAL HANGARS (HELICOPTER)	8,100 SF	29,122 SF	14,580 SF	14,542 SF
TERMINAL	2,800 SF	8,040 SF	7,920 SF	120 SF
RESTAURANT	2,730 SF	4,040 SF	4,000 SF	40 SF
AUTOMOBILE PARKING	152	234	234	0
* DERELICT AIRCRAFT TIE-DOWNS NOT INCLUDED				

LEGEND	
DESCRIPTION	SYMBOL
INDIVIDUAL HANGARS	
TIE-DOWNS	
TIE-DOWNS FOR DERELICT AIRCRAFT	
CONVENTIONAL HANGARS	
TERMINAL	
RESTAURANT	
NON-AVIATION USE	
AUTOMOBILE PARKING	
ACQUIRE IN FEE	
HELICOPTER OPERATING AREA	
GRASS/RECREATION AREA	
WEATHER SENSOR	
ROAD	
FENCING	

HIGHLIGHTS OF ALTERNATIVE

- Meets 2030 requirements
- New Terminal Area approximately midfield
- Remote Helicopter Operating Area
- Exanded aircraft facilities

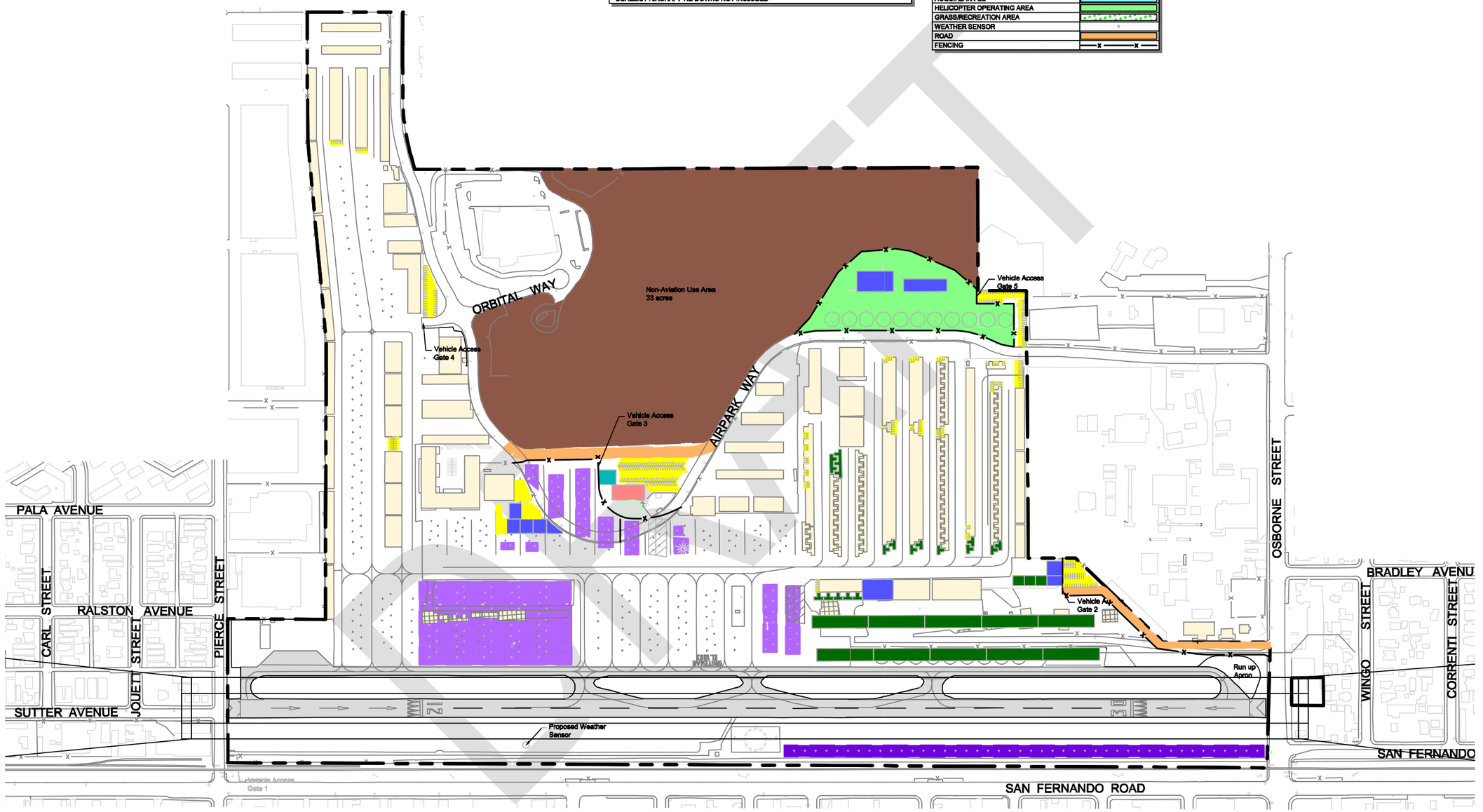

Figure 6-9
Landside Alternative 4

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include eleven heliports, two conventional hangars, and an automobile parking lot. In addition, the construction in the Development Area A is suggested to start. This includes rerouting the Airport Entrance Road, building three conventional hangars, constructing approximately 61 individual hangars, and relocating parking facilities. The helicopter operating area will be at a different elevation than the rest of the airport, which will not influence expected operations. Helicopter operators will be provided 205,890 square feet of total apron, helipad, and hangar space.

Phase 3: At the completion of the new helicopter operating area, the current helicopter area will be used to build an additional 50 individual hangars and relocate the run up apron. This long-term phase also includes the completion of other projects in the former terminal/helicopter operating area. Tie-down facilities adjacent to the current terminal are proposed to be expanded and Development Area E is suggested to provide tie-downs for derelict aircraft only. This will allow approximately 24 tie-downs on the airport to be freed up for regular based aircraft. Of the existing tie-downs, an additional six will be designated transient tie-downs to meet long-term requirements. A weather sensor is proposed to be built north of the tower, adjacent to other weather sensors located on the airport.

Item	Required (2030)	Provided
General Aviation Terminal	7,920 SF	8,040 SF
Restaurant	4,000 SF	4,040 SF
Tie-Downs	324	325
Individual Hangars	554	569
Conventional Hangars (Fixed Wing)	45,850 SF	63,128 SF
Conventional Hangars (Helicopters)	14,580 SF	29,122 SF
Automobile Parking	234	234

Source: AECOM Transportation analysis.

Evaluation of Landside Alternatives

The four landside alternatives were ranked in a similar manner as the airside alternatives. Table 6-4 depicts the ranking according to the evaluation criteria previously defined. A brief discussion of how the alternatives rank follows.

All four alternatives meet the requirements for year 2030. In addition, efforts were made to meet FAA taxilane obstacle free area design standards; however, in cases where these standards could not be met, development was designed to match existing conditions found at the airport. This means that in some hangar areas, the distance between hangars will limit hangar use to smaller aircraft.

As seen in the table, the alternatives were closely ranked. Alternative 2 ranks slightly lower in its ability to accommodate changes, largely due to the fact that should land not be acquired as shown, it would be severe detriment to the alternative, and the alternative would not be able to accommodate forecasted demand.

Alternative 1 ranks very well in operational efficiency as it centralizes the terminal and retains the helicopters in their present location. Movement of the helicopters to another area of the airport has significant air traffic control concerns.

All alternatives are expensive due in large part to the fact that easily developable areas have all but vanished at Whiteman. Large areas of land for new hangars are not available, forcing the need to perform significant grading of the adjacent hill, or acquisition of land adjacent to the airport.

Table 6-4
LANDSIDE EVALUATION MATRIX

Criterion	No Action	Alternative 1	Alternative 2	Alternative 3	Alternative 4
Long-Term Aviation Needs	Poor – Does not meet 2030 facility requirements	Excellent – Exceeds 2030 facility requirements.	Good – Meets 2030 facility requirements.	Good – Meets 2030 facility requirements.	Good – Meets 2030 facility requirements.
Safety of Aircraft Operations	Good – No change.	Good – No change.	Good – No change.	Good – No change.	Good – No change.
Community and Environmental Compatibility	Excellent – Does not impact the community.	Good – 2.5 acre acquisition is minimal impact.	Good – 5.9 acre acquisition is a potential impact.	Fair – helicopter operations moved closer to residences.	Fair – helicopter operations moved closer to residences.
Flexibility to Accommodate Change	Poor – Additional demand would go unmet.	Good – Helicopter area is limited and new road has sharp turn.	Fair – limited hangar and tie-down flexibility; land acquisition may be limiting factor.	Good – New road has sharp turn, limited hangar space.	Good – but limited automobile parking and tie-downs.
Efficiency of Construction Phasing	Excellent – No changes planned.	Excellent – short, intermediate, and long-term needs are met.	Excellent – short, intermediate, and long-term needs are met.	Excellent – short, intermediate, and long-term needs are met.	Excellent – short, intermediate, and long-term needs are met.
Operational Efficiency	Poor – Without new facilities, aircraft and hangars demand will not be met and aircraft will be haphazardly organized.	Excellent – centralized terminal; helicopters in current location.	Poor – remote terminal difficult to navigate to/from; consolidated helicopter area in middle of tie-down ramp.	Good – Terminal in current location; remote helicopters outside of ATCT view and potential conflicts with LA County Fire.	Fair – centralized terminal; remote helicopters outside of ATCT view and potential conflicts with LA County Fire.
Relative Financial Effectiveness	Excellent – No costs.	Fair – Grading of hill, road relocation, and land acquisition.	Poor – Grading of hill, land acquisition, road relocation, moving heliports.	Fair – Grading of hill, road relocation, moving heliports.	Good – Grading of hill, less road relocation, and moving heliports.

Source: AECOM Transportation analysis.

Recommended Landside Alternative

Alternative 1 is the recommended landside alternative. While this alternative does not rank highest in every category, it provides a good balance of operational efficiency, flexibility, construction phasing, and financial effectiveness. This alternative also represents the County's intended development of airport for the last several years. The County has been striving to locate all the helicopter operators in Development Area A and planning for a new terminal in Development Area D for several years.

In addition, during the March 11th public open house attendees provided input on their most preferred landside alternative. Landside Alternative 1 was the most favored alternative. Therefore, alternative 1 is the recommended landside alternative.

GENERAL AVIATION TERMINAL BUILDING

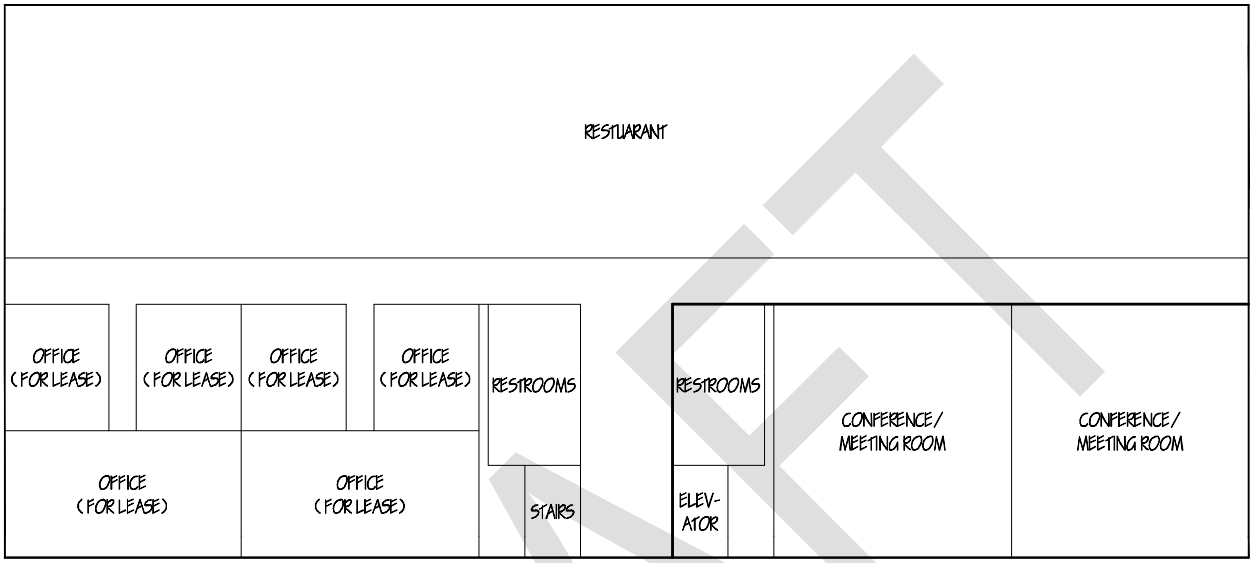
As was noted in Chapter 5, additional general aviation terminal space is required in the year 2030. Terminal space can be provided by the County or by FBOs at the airport. The current County terminal building is approximately 2,730 square feet and nearly 8,000 square feet are required in 2030. While Vista Aviation provides some terminal uses, the County has expressed interest in developing a dedicated terminal building that will also house airport administration offices, office rental spaces, and a meeting room.

The County recently (early 2000s) constructed a new terminal building at El Monte Airport (another County facility), approximately 8,000 square feet in size. While the size is nearly identical to the requirements for year 2030 at Whiteman, it is important to point out that the terminal included provisions for a restaurant. The 8,000 square feet in terminal area requirement at Whiteman does not include the restaurant.

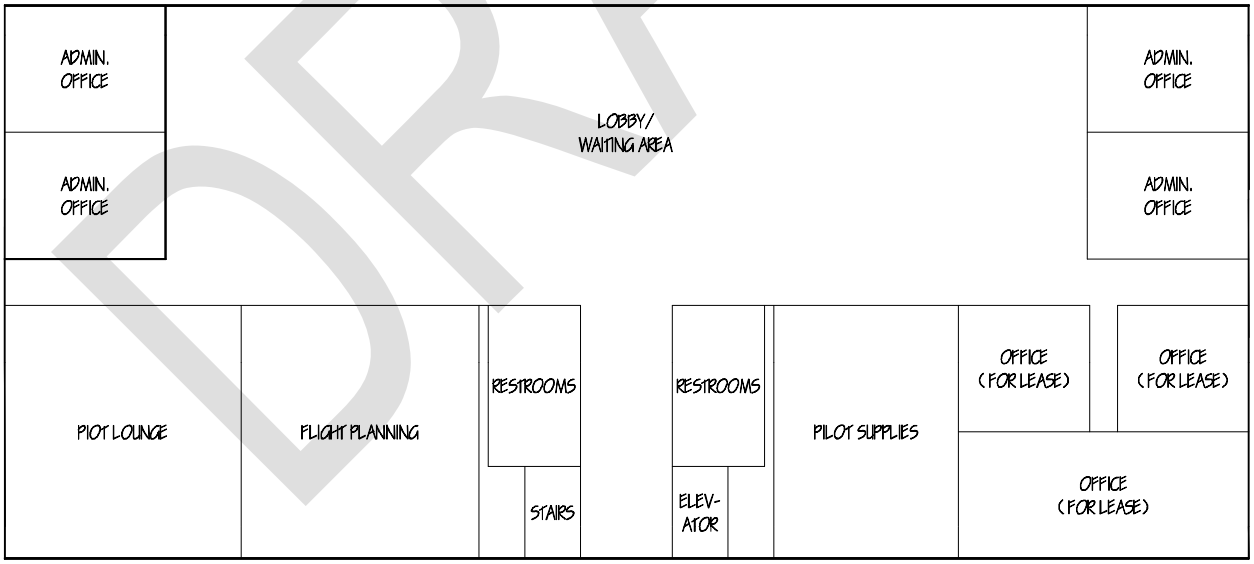
While all the alternatives described above provide a separate building for a restaurant, it is not uncommon to have a restaurant inside the terminal building. Should this be done at Whiteman, it is recommended that a two-story terminal building be provided, with the top level featuring the restaurant. Figure 6-10 shows a potential terminal building layout for a two-story, 16,000 square foot building with a restaurant located on the second story.

RECOMMENDED DEVELOPMENT CONCEPT

The recommended development concepts are Airside Alternative 1 and Landside Alternative 1 (Figure 6-11). Airside Alternative 1 is the recommended alternative as it is the most cost efficient, does not impact the community, and allows for full safety areas to be provided without the use of declared distances. Landside Alternative 1 provides the best operational efficiency and is best able to accommodate facility requirements during the intermediate planning years. This alternative is aligned with recent development at the airport and retains the County's vision of expanding the current helicopter area while centralizing the terminal.



SECOND FLOOR PLAN



FIRST FLOOR PLAN

Figure 6-10
Potential Terminal Building Layout

200' 0 200'
GRAPHIC SCALE

FACILITIES TABLE				
DESCRIPTION	EXISTING	PROVIDED (TOTAL)	REQUIRED (2030)	DIFFERENCE
INDIVIDUAL HANGARS	444	572	554	18
TIE-DOWNS*	220	325	324	1
CONVENTIONAL HANGARS (FIXED WING)	36,865 SF	101,825 SF	45,650 SF	55,975 SF
CONVENTIONAL HANGARS (HELICOPTER)	8,100 SF	30,670 SF	14,580 SF	16,190 SF
TERMINAL	2,800 SF	8,040 SF	7,920 SF	120 SF
RESTAURANT	2,730 SF	4,040 SF	4,000 SF	40 SF
AUTOMOBILE PARKING	152	267	234	33
* DERELICT AIRCRAFT TIE-DOWNS NOT INCLUDED				

LEGEND	
DESCRIPTION	SYMBOL
INDIVIDUAL HANGARS	
TIE-DOWNS	
TIE-DOWNS FOR DERELICT AIRCRAFT	
CONVENTIONAL HANGARS	
TERMINAL	
RESTAURANT	
NON-AVIATION USE	
AUTOMOBILE PARKING	
ACQUIRE IN FEE	
HELICOPTER OPERATING AREA	
PICNIC AREA	
WEATHER SENSOR	
ROAD	
PROPOSED RUNWAY	
FENCING	
RUNWAY SAFETY AREA (RSA)	
RUNWAY OBJECT FREE AREA (ROFA)	
RUNWAY PROTECTION ZONE (RPZ)	

HIGHLIGHTS OF ALTERNATIVE

- Runway length reduced by 355 feet
- Meets FAA Runway Safety Area and Runway Object Free Area standards
- Current property boundary maintained
- Exceeds 2030 requirements
- New Terminal Area approximately midfield
- Consolidated Helicopter Operating Area
- Exanded hangar area
- 2.5 acres of land acquisition

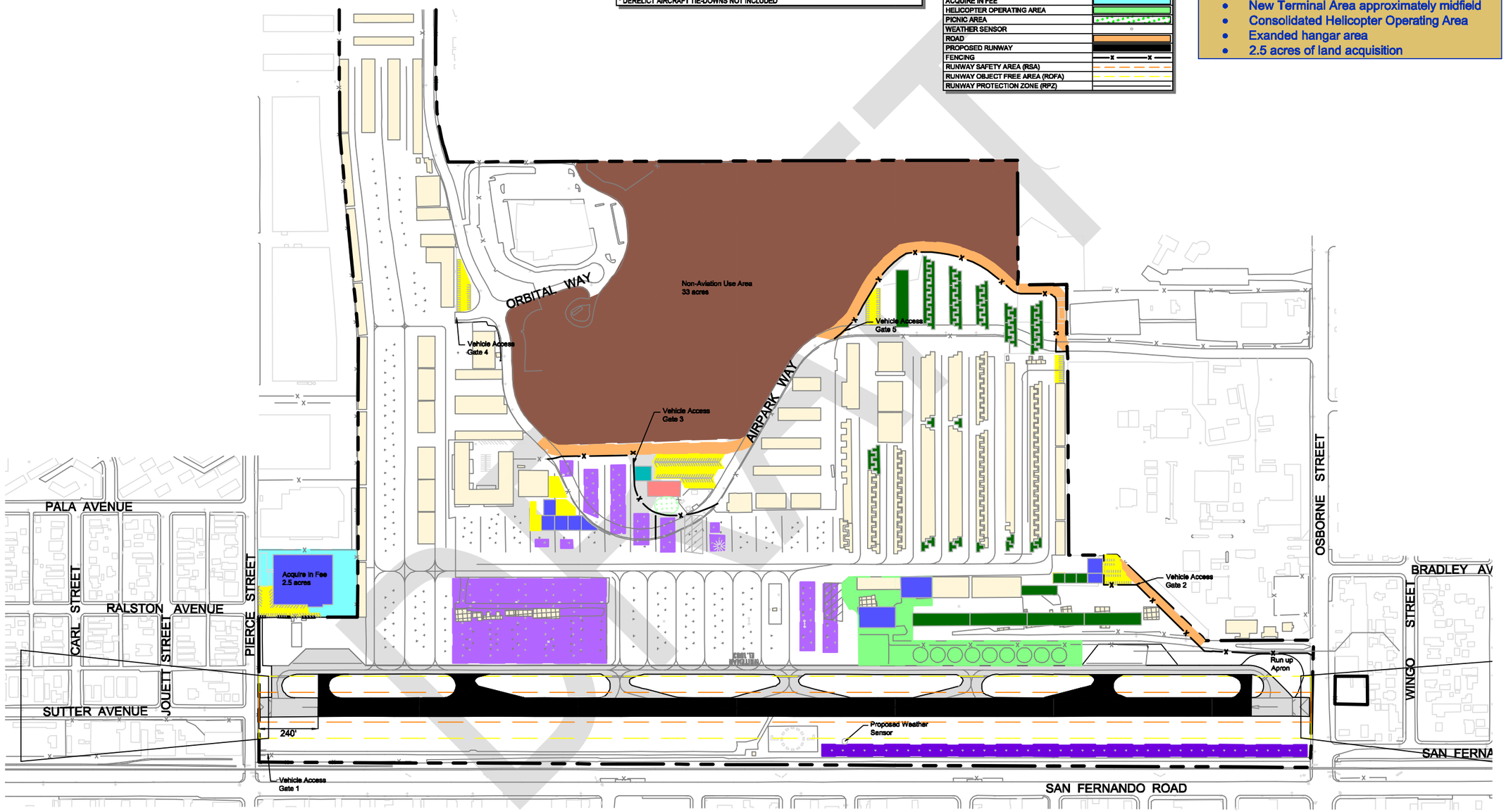


Figure 6-11
Recommended Development Concept

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