

CHAPTER 5: ALTERNATIVES ANALYSIS

Introduction

A key aspect of any Airport Layout Plan (ALP) project is the establishment of a preferred development plan that will guide future capital projects and development decisions. This chapter describes the various airside, land-use, and terminal/landside area development alternatives that were created based on the needs defined in the Facility Requirements Chapter. This chapter also discusses the evaluation process used to select the preferred developmental alternative for each area (e.g., airside, land-use, and terminal/landside), reviews the results of the evaluation process, and provides an overview of the anticipated environmental impacts of the combined preferred developmental plan.

Alternatives Development Process

The alternatives development process began with the review of the Dallas Executive Airport (RBD or Airport) facility requirements and devising numerous development options that could potentially satisfy those requirements. Those development options were then consolidated into three airside, three land-use, and seven terminal/landside alternatives that went through a formal evaluation/review process to select the preferred alternative(s) for each area.

Airside alternatives include airport facilities that support the active movement and circulation of aircraft including runways, taxiways, and approach facilities/equipment. Land-use alternatives review the airport's available land holdings to identify the potential highest and best development use (i.e., small/medium box hangar, large box hangar, non-aeronautical, Navigational Aid (NAVAID) protected areas, long-term development area, etc.) for undeveloped portions of airport property. Terminal/landside alternatives include Fixed Base Operator (FBO)/terminal buildings, aircraft fuel storage/delivery systems, aircraft parking aprons, hangars of various sizes/types, roadway access, and automobile parking.

Future development planning at an airport should initially focus on the airport's airside infrastructure as these facilities enable the core function of an airport which is supporting the safe and efficient movement of aircraft to/from the airport into the National Airspace System (NAS). Once a preferred development plan has been established for an airport's airside facilities, concepts regarding future land-use planning and terminal/landside development, can be considered. The preferred land-use plan is used to guide terminal/landside facility alternatives.



Airside Alternatives

As discussed in the forecast analysis, the critical aircraft for RBD is anticipated to shift from C-II to C-III during the planning horizon which impacts various aspects of the Airport's airside infrastructure. These impacts were further analyzed in the facility requirements analysis and used to establish the airside development objectives identified below:

- Extend Runway 17-35 to 4,800 feet in total length
- Redesignate Runway 17-35 to Runway 18-36
- Retain Runway 17-35 to support future operational capacity needs
- Resolve Runway Safety Area (RSA) and Runway Object Free Area (ROFA) deficiencies with the perimeter fence and vehicle service road (VSR) at the approach end of Runway 31
- Resolve the ROFA deficiency for Runway 13-31 associated with the blast fence northeast of Taxiway B
- Add a PAPI-4 system to Runway 35
- Relocate Taxiway B to be 400 feet from the Runway 13-31 centerline when the critical aircraft shifts to C-III-4,000 for the runway
- Add a runway exit taxiway between Taxiways A4 and Taxiway D to improve runway capacity for landings on Runway 17
- Add a runway exit taxiway between Taxiways B1 and A3 to improve runway capacity for landings on Runway 13 and Runway 31
- Add a runway exit taxiway between Taxiways B2 and B3 to improve runway capacity for landings on Runway 31
- Realign the intersection of Taxiway A4, Taxiway B, and Runway 17-35 to improve pilot situational awareness
- Realign the intersection of Taxiway D, Taxiway A3, and Runway 13-31 to provide a 90-degree crossing of Runway 13-31
- Analyze the ability to eliminate runway crossings in the middle third of Runway 13-31 and Runway 17-35
- Resolve ultimate Taxiway Object Free Area (TOFA) penetrations associated with Airplane Design Group (ADG) III aircraft using Taxiway B and Taxiway D
- Identify vertiport sites on airport property that could support a diverse array of Advanced Air Mobility (AAM) use cases including passenger/air taxi, cargo, and general aviation
- Reserve areas for emerging fuel types (i.e., sustainable aviation fuel, electric aircraft, and hydrogen)
- Establish a perimeter road connecting the Commemorative Air Force apron to where the perimeter road begins adjacent to the Marvin D. Love Freeway



- Add engine run-up pads to each end of Runway 17-35 to support engine run-ups for single engine piston aircraft

These development objectives informed the creation of the three identified airside alternatives for RBD. However, the following development objectives were integrated into the terminal/landside alternatives analysis as their development feasibility is closely integrated with other terminal/landside infrastructure elements such as hangars and roadways:

- Identify vertiport sites on airport property that could support a diverse array of AAM use cases including passenger/air taxi, cargo, and general aviation
- Reserve areas for emerging fuel types (i.e., SAF, electric aircraft, and hydrogen)
- Establish a perimeter road connecting the CAF apron to where the perimeter road begins adjacent to the Marvin D. Love Freeway

The following subsections summarize the improvements depicted in each airside alternative.

Since Runway 17-35 will ultimately be redesignated to Runway 18-36, the runway is most commonly referred to as Runway 18-36 in this chapter as the alternative exhibits reflect the ultimate designation. However, the runway is referred to as Runway 17-35 in some instances to acknowledge the designation in the existing condition.

Airside Alternative #1

Airside Alternative #1 includes the extension of Runway 18-36 to an ultimate length of 4,800 feet and numerous taxiway geometry changes to improve design standards compliance and airfield capacity. The plan assumes all future taxiways will be developed to TDG 2B design standards and does not eliminate crossings in the middle third of the runways. Airside improvements depicted in the alternative include:

- Runway Changes
 - Runway 17-35 extended to an ultimate length of 4,800 feet
 - Runway 17-35 redesignated to Runway 18-36
 - RSA and ROFA deficiencies at the approach end of Runway 31 resolved by reducing the accelerate stop distance available (ASDA) and landing distance available (LDA) for Runway 13 by 37 feet
- Taxiway Changes
 - Taxiway B relocated to 400 feet from the Runway 13-31 centerline
 - Taxiway A4 and B crossing of Runway 18-36 realigned to a 90-degree crossing



- Taxiway D and A3 crossing of Runway 13-31 realigned to a 90-degree crossing
- Taxiway E extended to the approach ends of Runway 13 and Runway 36
- Additional taxiway added at the departure end of Runway 31 to enhance runway capacity
- Additional taxiway added for aircraft exiting Runway 13-31 to the south. Taxiway is west of the runway/runway intersection to enhance runway capacity
- Additional taxiway added at the departure end of Runway 18 to enhance runway capacity
- Engine run-up areas added to each end of Runway 18-36
- Instrument Approach/NAVAID Changes
 - No instrument approach changes
 - PAPI-4L added to Runway 36 (not visually shown)
 - Automated Surface Observing System (ASOS) remains in the existing location

Airside Alternative #1 is shown in **Figure 5-1**.

Airside Alternative #2

Airside Alternative #2 includes the extension of Runway 18-36 to an ultimate length of 4,800 feet and numerous taxiway geometry changes to improve design standards compliance and airfield capacity. The plan assumes all future taxiways will be developed to TDG 2B design standards except for Taxiway E which will be developed to TDG 3 design standards. This alternative eliminates crossings in the middle third of the runways. Airside improvements depicted in the alternative include:

- Runway Changes
 - Runway 18-36 extended to an ultimate length of 4,800 feet
 - Runway 17-35 redesignated to Runway 18-36
 - RSA and ROFA deficiencies at the approach end of Runway 31 resolved by reducing the ASDA and LDA for Runway 13 by 18 feet and establishing a frangible fence
- Taxiway Changes
 - Taxiway B relocated to 400 feet from the Runway 13-31 centerline
 - Taxiway A4 and B crossing of Runway 18-36 eliminated
 - Taxiway A5 and C crossing of Runway 18-36 eliminated
 - Taxiway D and A5 crossing of Runway 13-31 realigned to a 90-degree crossing
 - Taxiway E extended to the approach ends of Runway 13 and Runway 36
 - Additional taxiway added at the departure end of Runway 31 to enhance runway capacity



- Additional taxiway added for aircraft exiting Runway 13-31 to the south. Taxiway is west of the runway/runway intersection to enhance runway capacity
- Additional taxiway added at the departure end of Runway 18 to enhance runway capacity
- Engine run-up areas added to each end of Runway 18-36
- Instrument Approach/NAVAID Changes
 - No instrument approach changes
 - PAPI-4L added to Runway 36 (not visually shown)
 - ASOS relocated to the west to accommodate location of Taxiway E

Airside Alternative #2 is shown in **Figure 5-2**.

Airside Alternative #3

Airside Alternative #3 includes the extension of Runway 18-36 to an ultimate length of 4,800 feet and numerous taxiway geometry changes to improve design standards compliance and airfield capacity. The plan assumes all future taxiways will be developed to TDG 2B design standards except for Taxiway E and the realigned portion of Taxiway D which will be developed to TDG 3 design standards. This alternative provides TDG 3 taxiway infrastructure connecting the east and west sides of the airport. This alternative does not eliminate crossings in the middle third of the runways. Airside improvements depicted in the alternative include:

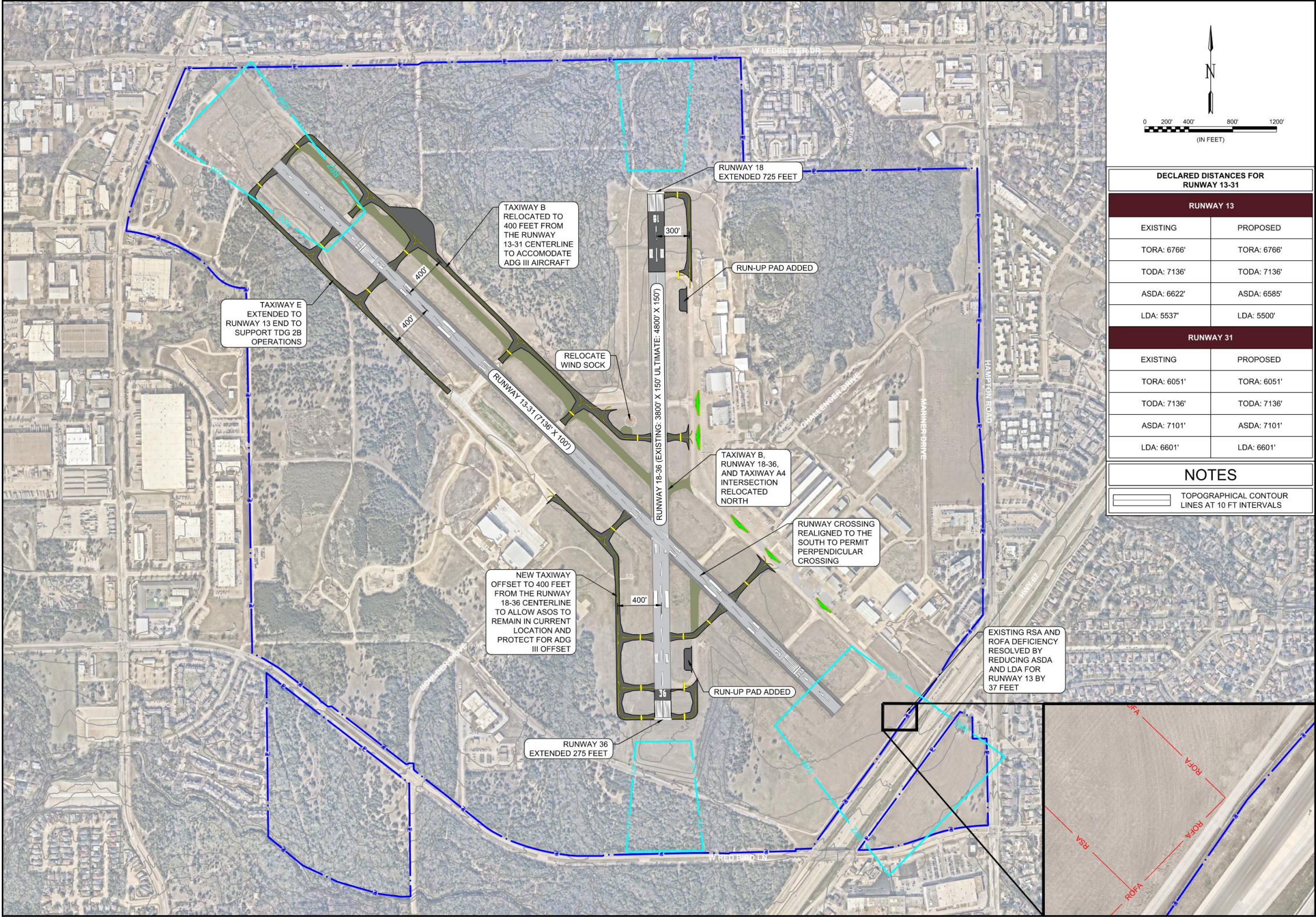
- Runway Changes
 - Runway 18-36 extended to an ultimate length of 4,800 feet
 - Runway 17-35 redesignated to Runway 18-36
 - RSA and ROFA deficiencies at the approach end of Runway 31 resolved by reducing the ASDA and LDA for Runway 13 by 37 feet
- Taxiway Changes
 - Taxiway B relocated to 400 feet from the Runway 13-31 centerline
 - Taxiway A4 and B crossing of Runway 18-36 realigned to a 90-degree crossing
 - Taxiway D and A3 crossing of Runway 13-31 realigned to a 90-degree crossing
 - Taxiway E extended to the approach ends of Runway 13 and Runway 36
 - Additional taxiway added at the departure end of Runway 31 to enhance runway capacity
 - Additional taxiway added for aircraft exiting Runway 13-31 to the south. Taxiway is west of the runway/runway intersection to enhance runway capacity



- Additional taxiway added at the departure end of Runway 18 to enhance runway capacity
 - Engine run-up areas added to each end of Runway 18-36
 - Engine run-up area added on Taxiway E
- Instrument Approach/NAVAID Changes
 - No instrument approach changes
 - PAPI-4L added to Runway 36 (not visually shown)
 - ASOS remains in the existing location

Airside Alternative #3 is shown in **Figure 5-3**.

Figure 5-1 – Airside Alternative #1



Source: Garver, 2026



DECLARED DISTANCES FOR RUNWAY 13-31

RUNWAY 13	
EXISTING	PROPOSED
TORA: 6766'	TORA: 6766'
TODA: 7136'	TODA: 7136'
ASDA: 6622'	ASDA: 6604'
LDA: 5537'	LDA: 5519'

RUNWAY 31	
EXISTING	PROPOSED
TORA: 6051'	TORA: 6051'
TODA: 7136'	TODA: 7136'
ASDA: 7101'	ASDA: 7101'
LDA: 6601'	LDA: 6601'

NOTES

- TOPOGRAPHICAL CONTOUR LINES AT 10 FT INTERVALS

Map Labels:

- RUNWAY 18 EXTENDED 725 FEET
- RUNWAY 13-31 (7136' X 100')
- RUNWAY 36 EXTENDED 275 FEET
- TAXIWAY B RELOCATED TO 400 FEET FROM THE RUNWAY 13-31 CENTERLINE TO ACCOMMODATE ADG III AIRCRAFT
- TAXIWAY E EXTENDED TO RUNWAY 13 END TO SUPPORT TDG 3 OPERATIONS
- RUNWAY CROSSINGS IN THE MIDDLE THIRD OF ALL RUNWAYS ELIMINATED
- RELOCATE ASOS
- NEW TAXIWAY OFFSET TO 240 FEET FROM THE RUNWAY 18-36 CENTERLINE
- RUNWAY 18-36 (EXISTING: 3800' X 150' ULTIMATE: 4800' X 150')
- TAXIWAY B, RUNWAY 18-36, AND TAXIWAY A4 INTERSECTION RELOCATED NORTH
- RUNWAY CROSSING REALIGNED TO THE SOUTH TO PERMIT PERPENDICULAR CROSSING
- RUN-UP PAD ADDED
- EXISTING RSA AND ROFA DEFICIENCY RESOLVED BY REDUCING ASDA AND LDA FOR RUNWAY 13 BY 18 FEET

Scale: 0 200' 400' 800' 1200' (IN FEET)

North Arrow: N

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DECLARED DISTANCES FOR RUNWAY 13-31

RUNWAY 13	
EXISTING	PROPOSED
TORA: 6766'	TORA: 6766'
TODA: 7136'	TODA: 7136'
ASDA: 6622'	ASDA: 6585'
LDA: 5537'	LDA: 5500'

RUNWAY 31	
EXISTING	PROPOSED
TORA: 6051'	TORA: 6051'
TODA: 7136'	TODA: 7136'
ASDA: 7101'	ASDA: 7101'
LDA: 6601'	LDA: 6601'

NOTES

TOPOGRAPHICAL CONTOUR LINES AT 10 FT INTERVALS

EXISTING RSA AND ROFA DEFICIENCY RESOLVED BY REDUCING ASDA AND LDA FOR RUNWAY 13 BY 37 FEET

Alternatives Analysis



Airside Alternatives Evaluation

One of the tasks of an ALP is to analyze airside alternatives to determine which alternative provides a realistic and feasible plan that will allow the airport to meet future demand in a safe and efficient manner. To facilitate this analysis, evaluation criteria were established, and an evaluation matrix was used to show how each airside alternative compared based on the evaluation criteria.

The evaluation criteria used for this analysis are discussed below:

- Support for Ultimate TDG 3 Operations – Does the alternative support the safe and efficient movement of TDG 3 aircraft through the airfield environment while minimizing capital costs? Ideally, the preferred alternative should facilitate the movement of TDG 3 aircraft to/from Runway 13-31 to the east and west sides of the airfield.
- ASOS Relocation Required – Does the alternative require the relocation of the ASOS? Ideally, the preferred alternative should enable the ASOS to stay in its current location to minimize development costs and impacts to existing development areas.
- Potential for Negative Security Impacts – Does the alternative create any potential negative impacts to airport security and public protection? Ideally, the preferred alternative will not contain any security vulnerabilities.
- Taxi Distances – Eastern Development Area to Runway 13 Approach End – What is the taxi distance for an aircraft moving from the eastern development area to the approach end of Runway 13? Ideally, the preferred alternative should minimize taxi distances from terminal/landside areas to/from the runways to reduce taxi times, aircraft emissions, and the potential for congestion. At RBD, the longest anticipated taxi route is to/from the eastern development area to the approach end of Runway 13.
- Elimination of Middle Third Runway Crossings – Does the alternative eliminate runway crossings in the middle third of the runway(s)? Ideally, the preferred alternative should eliminate runway crossings in the middle third of a runway(s) for FAA design standards.

Airside Evaluation Results

Based on the evaluation criteria, the following matrix (**Table 5-1**) was developed showing the proposed rating of each alternative.



Table 5-1 – Airside Evaluation

Criteria	Alternative 1	Alternative 2	Alternative 3
Support for Ultimate TDG 3 Operations			
ASOS Relocation Required			
Potential for Negative Security Impacts			
Taxi Distance - Eastern Development to Runway 13	4,980 ft.	7,120 ft.	4,980 ft.
Elimination of Middle Third Runway Crossings			

-  - Optimal Positive Effect and/or Limited Negative Impact
-  - Moderate Positive Effect and/or Moderate Negative Impact
-  - Limited Positive Effect and/or Significant Negative Impact

Source: Garver, 2026

Evaluation Commentary

Based on the evaluation criteria, several key factors were identified that guided the project steering committee in selecting the preferred alternative:

- Support for Ultimate TDG 3 Operations – Alternatives #1, 2 and 3 progressively expand the amount of pavement designed to TDG 3 standards. Alternative #3 provides taxiway connectivity from the approach end of Runway 13 to existing and proposed developments on the eastern and western sides of the airfield. Consequently, Alternative #3 received the highest rating.
- ASOS Relocation Required – Alternative #2 is the only alternative that requires the relocation of the ASOS. This alternative requires the ASOS relocation because the southern portion of Taxiway E, that is parallel with Runway 18-36, is only offset 240 feet from the Runway 18-36 centerline in alignment with RDC B-II-5,000 standards. Alternatives #1 and 3 maintain a 400-foot offset from Taxiway E to the centerline of Runway 18-36 which allows the ASOS to remain in place. Consequently, Alternatives #1 and 3 received higher ratings.
- Potential for Negative Security Impacts – Alternative #2 is the only alternative that includes the development of a frangible fenceline at the approach end of Runway 31 to reduce the ASDA and LDA offset needed to resolve the existing RSA and ROFA penetration at the approach end of the runway. The frangible fenceline creates a potential security vulnerability. Consequently, Alternatives #1 and 3 received higher ratings.
- Taxi Distances – Eastern Development Area to Runway 13 Approach End – Alternative #2 is the only alternative that eliminated runway crossings in the middle third of the runways. This change requires a parallel taxiway along the northwestern portion of Runway 18-36 to enable aircraft to taxi from portions of the eastern development area to the approach end of Runway 13 which increases taxi distances. The taxiway distances for Alternative #1 and 3 are identical and less than the taxi distances for Alternative #2. Consequently, Alternatives #1 and 3 received higher ratings.
- Elimination of Middle Third Runway Crossings – Alternative #2 is the only alternative that eliminated crossings in the middle third of the runways. Consequently, Alternative #2 received the highest rating. According to FAA AC 150/5300-13B, the elimination of runway crossings in the middle third of a runway is a “recommended practice” and not a “standard.”

Preferred Airside Developmental Alternative

The results of the alternative evaluation concluded that Alternative #3 is the preferred airside alternative for RBD.



Land-Use Alternatives

Land-use alternatives identify and evaluate the feasibility of using portions of the Airport's landholdings for various types of development. For this analysis, land-use at the Airport was segmented into the following categories:

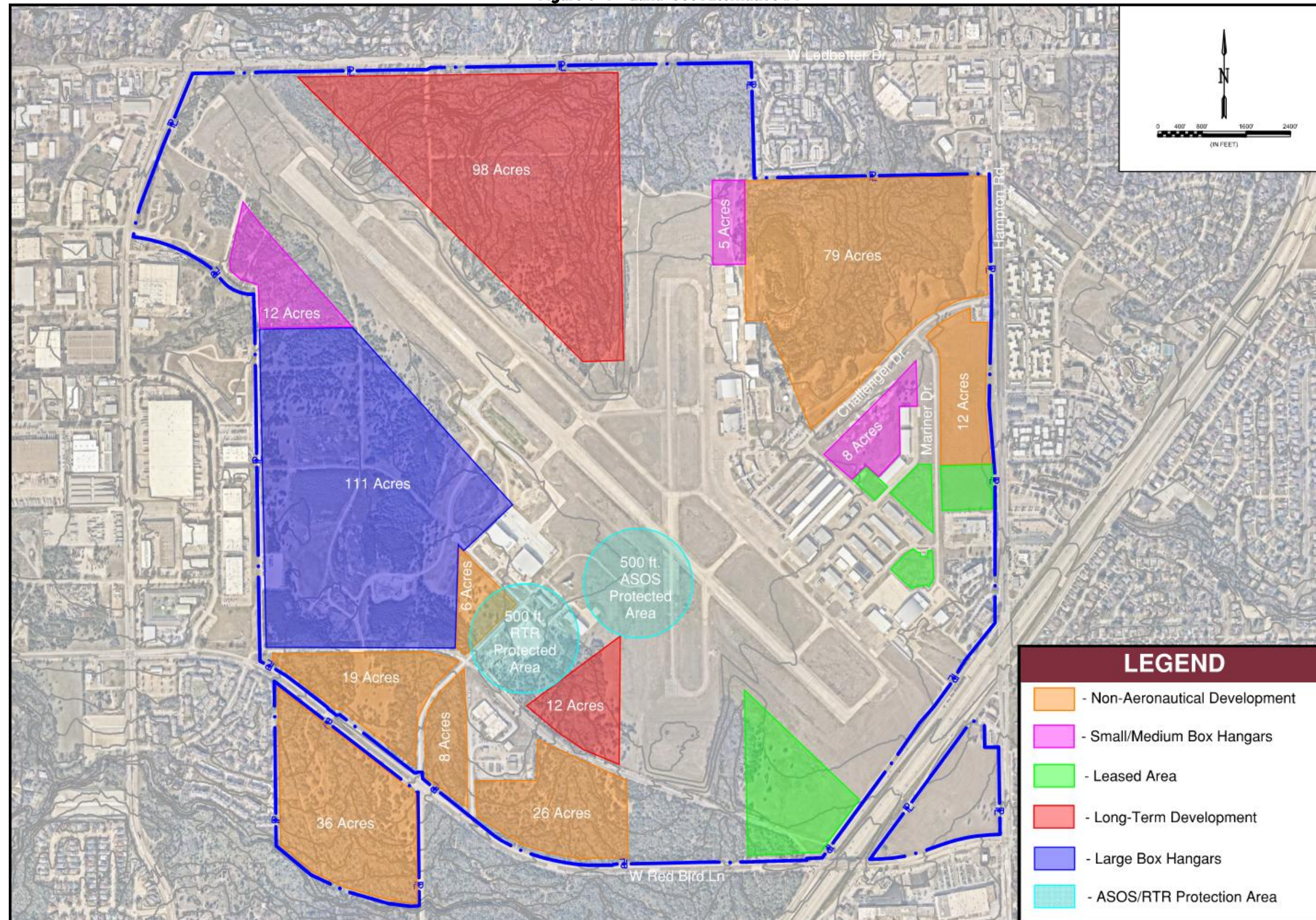
- Small/Medium Box Hangars – Land suited for small (50 feet x 50 feet) to medium (100 feet x 150 feet) box hangars. These hangars may be used for private use or for aeronautical business purposes.
- Large Box Hangars – Land suited for large box hangars (greater than 100 feet x 150 feet). These hangars may be used for private use or for aeronautical business purposes.
- Long-Term Development – The long-term development area is reserved for future airport development beyond the 20-year planning horizon.
- Non-Aeronautical Development – Non-aeronautical development includes the establishment of non-aeronautical facilities (e.g., commercial, storage, restaurants, industrial, etc.).
- Protected Areas – Protected areas surrounding the existing ASOS and Remote Transmit and Receiver (RTR) site.
- Existing Lease Areas – Areas subject to existing or pending lease agreements.

Based on interviews with existing tenants and a market review of recent hangars developments at RBD and other comparable general aviation airports in the DFW area, it is anticipated that most hangar development demand at RBD will be for hangars in the large box hangar category.

Based on the preferred airside alternative, the following land-use alternatives were established for RBD:

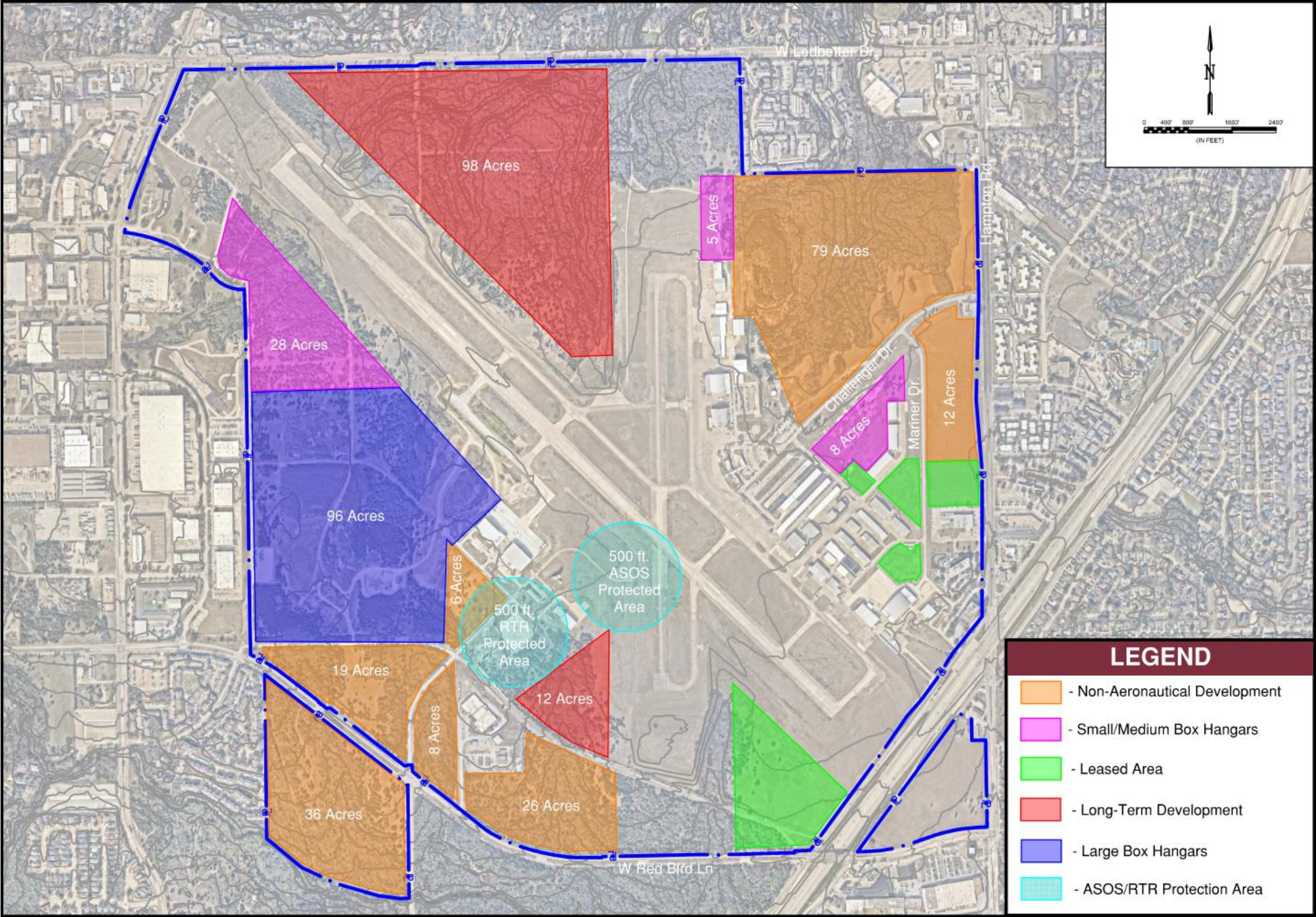
- Land-Use Alternative #1 – **Figure 5-4**
- Land-Use Alternative #2 – **Figure 5-5**
- Land-Use Alternative #3 – **Figure 5-6**

Figure 5-4 – Land-Use Alternative #1



Source: Garver, 2026

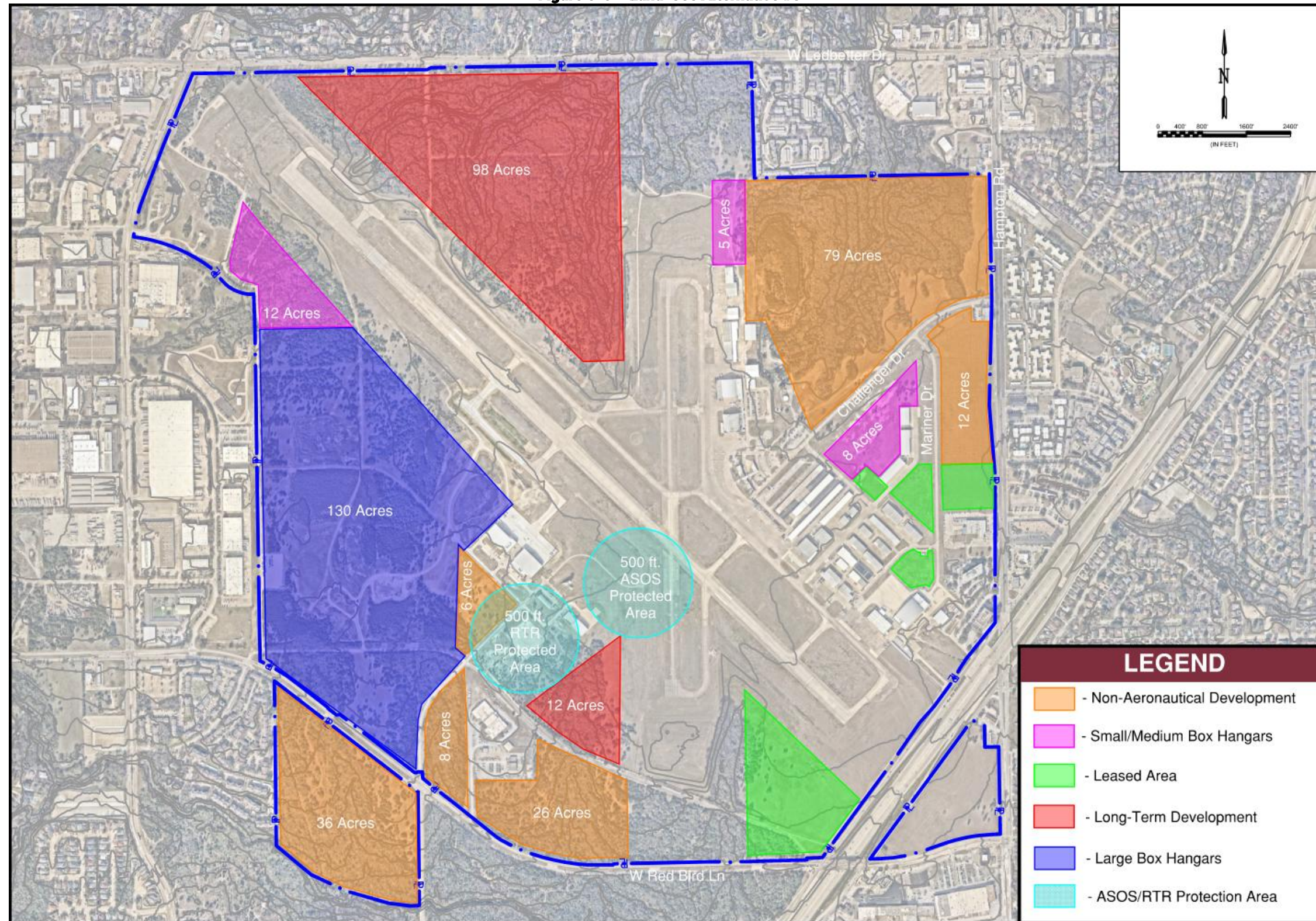
Figure 5-5 – Land-Use Alternative #2



Source: Garver, 2026



Figure 5-6 – Land-Use Alternative #3



Source: Garver, 2026

After reviewing the land-use alternatives with the project steering committee, Land-Use Alternative #3 was selected as the preferred alternative. This alternative was selected as the preferred alternative as it provides the most space for the development of large box hangars. Additionally, it should be noted that some of the property identified for non-aeronautical development will be reviewed in the terminal/landside alternatives as a potential site to accommodate one or more vertiports.

Terminal/Landside Development Alternatives

With the framework of the Airport's ultimate airside infrastructure and the preferred land-use plan identified, concepts involving the placement of terminal/landside facilities were prepared and analyzed. The overall objective of terminal/landside development is to illustrate the highest and best use of existing land holdings and surrounding land for new development or redevelopment.

The primary objectives that were considered during the development of the terminal/landside alternatives were:

- At least an additional 321,000 square feet of hangar space will be needed by PAL 5
- Aircraft apron space will need to be added to support hangar development
- Additional FBO terminal space may be needed when PAL 5 is reached
- Vehicle parking needs to be added in the eastern development area and as new hangars or aeronautical facilities are added
- An additional 20,000-gallon Jet A fuel farm is needed in the western development area

These items were identified and discussed in depth in the Facility Requirements Chapter. Additionally, the following development objectives from the airside alternatives analysis were incorporated into the terminal/landside alternatives:

- Identify vertiport sites on airport property that could support a diverse array of AAM use cases including passenger/air taxi, cargo, and general aviation
- Reserve areas for emerging fuel types (i.e., SAF, electric aircraft, and hydrogen)
- Establish a perimeter road connecting the CAF apron to where the perimeter road begins adjacent to the Marvin D. Love Freeway (not visually shown)

Terminal/Landside Alternatives – Development Areas

For planning purposes, the available landholdings at RBD can be segmented into two general areas for terminal/landside planning:

1. Eastern Development Area – Includes all available property east of Runway 18-36
2. Western Development Area – Includes all available property west of Runway 18-36

Four terminal/landside alternatives were created for the eastern development area, and three terminal/landside alternatives were created for the western development area. Each of these alternatives are discussed in the following subsections.



Eastern Development Area - Terminal/Landside Alternative #1

Terminal/Landside Alternative #1 for the eastern development area includes the development of mid-sized hangars adjacent to the approach end of Runway 18. The area commonly referred to as the Taxilane J area also includes mid-sized hangars.

A mid-size (i.e., two takeoff and landing locations) standalone vertiport facility is located between South Hampton Road and Mariner Drive in an area designated for non-aeronautical use. The vertiport facility is oriented to support north/south flight paths to/from the vertiport facility. The vertiport area includes a proposed vertiport terminal and an alternative fuel farm facility. The alternative fuel farm facility may support sustainable aviation fuel (SAF), electric charging equipment, and hydrogen. The location of the vertiport would have impacts to existing leased areas.

Eastern Development Area - Terminal/Landside Alternative #1 is shown in **Figure 5-7**.

Eastern Development Area - Terminal/Landside Alternative #2

Terminal/Landside Alternative #2 for the eastern development area includes the development of mid-sized hangars adjacent to the approach end of Runway 18. The area commonly referred to as the Taxilane J area includes smaller hangars (75 feet x 75 feet).

A small (i.e., one takeoff and landing location) standalone vertiport facility is located between South Hampton Road and Mariner Drive in an area designated for non-aeronautical use. The vertiport facility is oriented to support north/south flight paths to/from the vertiport facility. The vertiport area includes a proposed vertiport terminal and an alternative fuel farm facility. The alternative fuel farm facility may support sustainable aviation fuel (SAF), electric charging equipment, and hydrogen. The location of the vertiport would require the closure of a portion of Mariner Drive leaving more non-aeronautical development space present along the property bordering South Hampton Road. The location of the vertiport would have impacts to existing leased areas.

Eastern Development Area - Terminal/Landside Alternative #2 is shown in **Figure 5-8**.

Eastern Development Area - Terminal/Landside Alternative #3

Terminal/Landside Alternative #3 for the eastern development area includes the development of mid-sized hangars adjacent to the approach end of Runway 18. The area commonly referred to as the Taxilane J area includes a blend of small and mid-sized box hangars.



A large (i.e., three takeoff and landing locations) standalone vertiport facility is located between South Hampton Road and Mariner Drive in an area designated for non-aeronautical use. The vertiport facility is oriented to support north/south flight paths to/from the vertiport facility. The vertiport area includes a proposed vertiport terminal and an alternative fuel farm facility. The alternative fuel farm facility may support sustainable aviation fuel (SAF), electric charging equipment, and hydrogen. The location of the vertiport would require the closure of a portion of Mariner Drive. The location of the vertiport would have impacts to existing leased areas.

Eastern Development Area - Terminal/Landside Alternative #3 is shown in **Figure 5-9**.

Eastern Development Area - Terminal/Landside Alternative #4

Terminal/Landside Alternative #4 for the eastern development area includes the development of mid-sized hangars adjacent to the approach end of Runway 18. The area commonly referred to as the Taxilane J area includes a blend of small and mid-sized box hangars.

A mid-size (i.e., two takeoff and landing locations) standalone vertiport facility is located between South Hampton Road and Mariner Drive in an area designated for non-aeronautical use. The vertiport facility is oriented to support north/south flight paths to/from the vertiport facility. The vertiport area includes a proposed vertiport terminal and an alternative fuel farm facility. The alternative fuel farm facility may support sustainable aviation fuel (SAF), electric charging equipment, and hydrogen. The location of the vertiport would require the closure of a portion of Mariner Drive. The location of the vertiport is anticipated to have limited impacts to existing leased areas.

Eastern Development Area - Terminal/Landside Alternative #4 is shown in **Figure 5-10**.

Western Development Area - Terminal/Landside Alternative #1

Terminal/Landside Alternative #1 for the western development area includes the development of small and mid-sized hangars at the north end of the development area. The remainder of the development area is primarily used for large box hangars. The hangars are arranged in a “pod” configuration with the hangars facing each other with a common apron in the middle. This alternative also includes the development of up to two additional fuel farms and an alternative fuel farm in the northern portion of the development area. The alternative fuel farm facility may support sustainable aviation fuel (SAF), electric charging equipment, and hydrogen.



A mid-size (i.e., two takeoff and landing location) standalone vertiport facility is located between Boulder Drive and the Texas Guard Armory facility in an area designated for non-aeronautical use. The vertiport facility is oriented to support north/south flight paths to/from the vertiport facility. The vertiport area includes a proposed vertiport terminal and an alternative fuel farm facility. The location of the vertiport is anticipated to have no impacts to existing leased areas.

Western Development Area - Terminal/Landside Alternative #1 is shown in **Figure 5-11**.

Western Development Area - Terminal/Landside Alternative #2

Terminal/Landside Alternative #2 for the western development area includes the development of small and mid-sized hangars at the north end of the development area. The remainder of the development area is primarily used for large box hangars. The hangars arrangements vary with some hangars arranged in a “pod” configuration while others are arranged in a “linear” configuration parallel to Runway 13-31. The large box hangar development includes substantial space for remain overnight (RON) parking for ADG III aircraft.

A mid-size (i.e., two takeoff and landing locations) standalone vertiport facility is located immediately west of Boulder Drive in an area designated for non-aeronautical use. The vertiport facility is oriented to support north/south flight paths to/from the vertiport facility. The vertiport area includes a proposed vertiport terminal, an alternative fuel farm facility, and a traditional fuel farm facility. The alternative fuel farm facility may support sustainable aviation fuel (SAF), electric charging equipment, and hydrogen. The location of the vertiport is anticipated to have no impacts to existing leased areas.

Western Development Area - Terminal/Landside Alternative #2 is shown in **Figure 5-12**.

Western Development Area - Terminal/Landside Alternative #3

Terminal/Landside Alternative #3 for the western development area includes the development of small and mid-sized hangars at the north end of the development area. The remainder of the development area is used for large box hangars. The hangars are arranged in a “pod” configuration with the hangars facing each other with a common apron in the middle.

A mid-size (i.e., two takeoff and landing locations) standalone vertiport facility is located immediately west of Boulder Drive in an area designated for non-aeronautical use. The vertiport facility is oriented to support north/south flight paths to/from the vertiport facility. The vertiport area includes a proposed vertiport terminal, an alternative fuel farm facility,

and a traditional fuel farm facility. The alternative fuel farm facility may support sustainable aviation fuel (SAF), electric charging equipment, and hydrogen. The location of the vertiport is anticipated to have no impacts to existing leased areas.

Western Development Area - Terminal/Landside Alternative #3 is shown in **Figure 5-13**.

Figure 5-7 – Eastern Development Area - Terminal/Landside Alternative #1



Source: Garver, 2026

Figure 5-8 – Eastern Development Area - Terminal/Landside Alternative #2



Source: Garver, 2026

Figure 5-9 – Eastern Development Area - Terminal/Landside Alternative #3



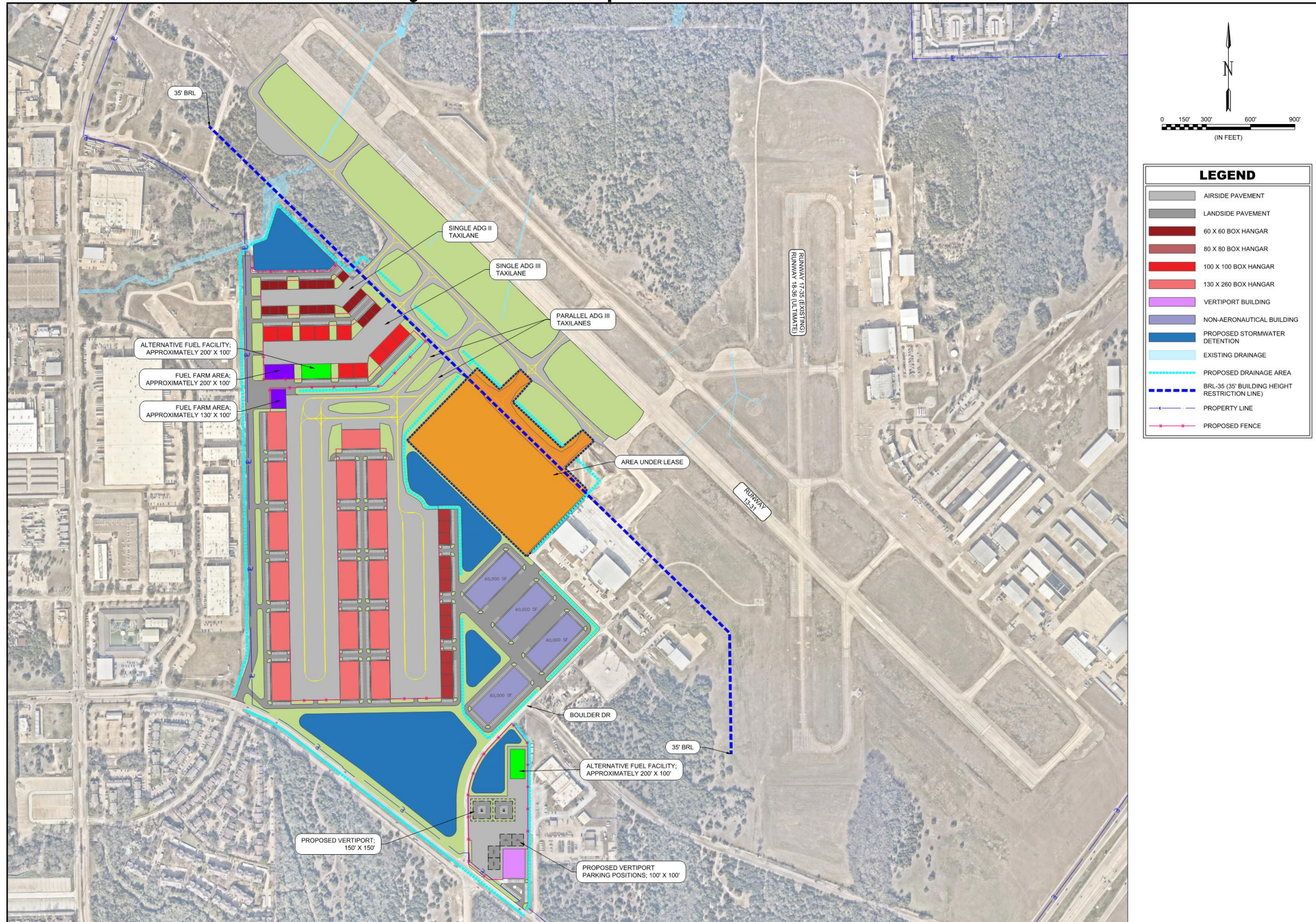
Source: Garver, 2026

Figure 5-10 – Eastern Development Area - Terminal/Landside Alternative #4



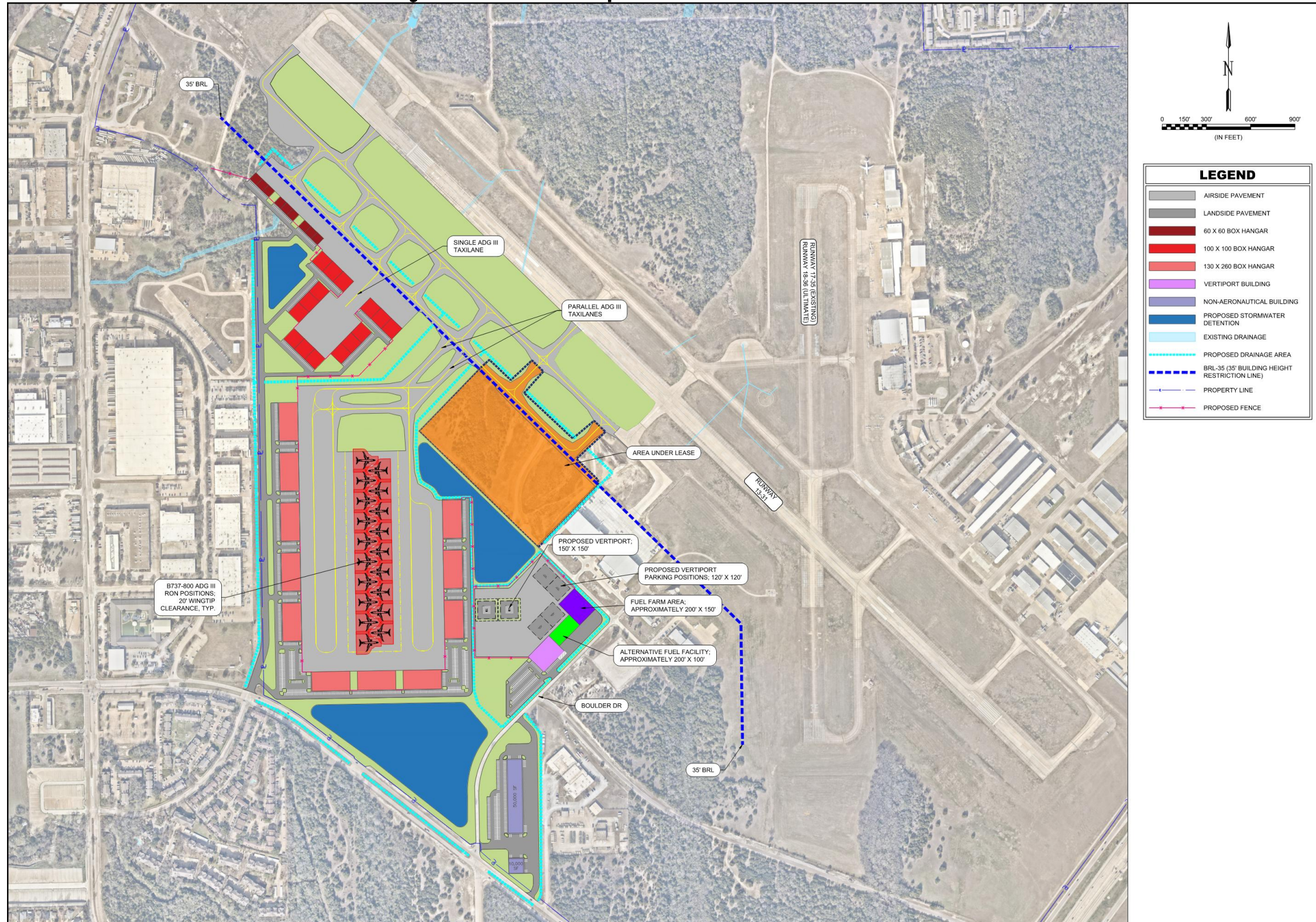
Source: Garver, 2026

Figure 5-11 – Western Development Area - Terminal/Landside Alternative #1



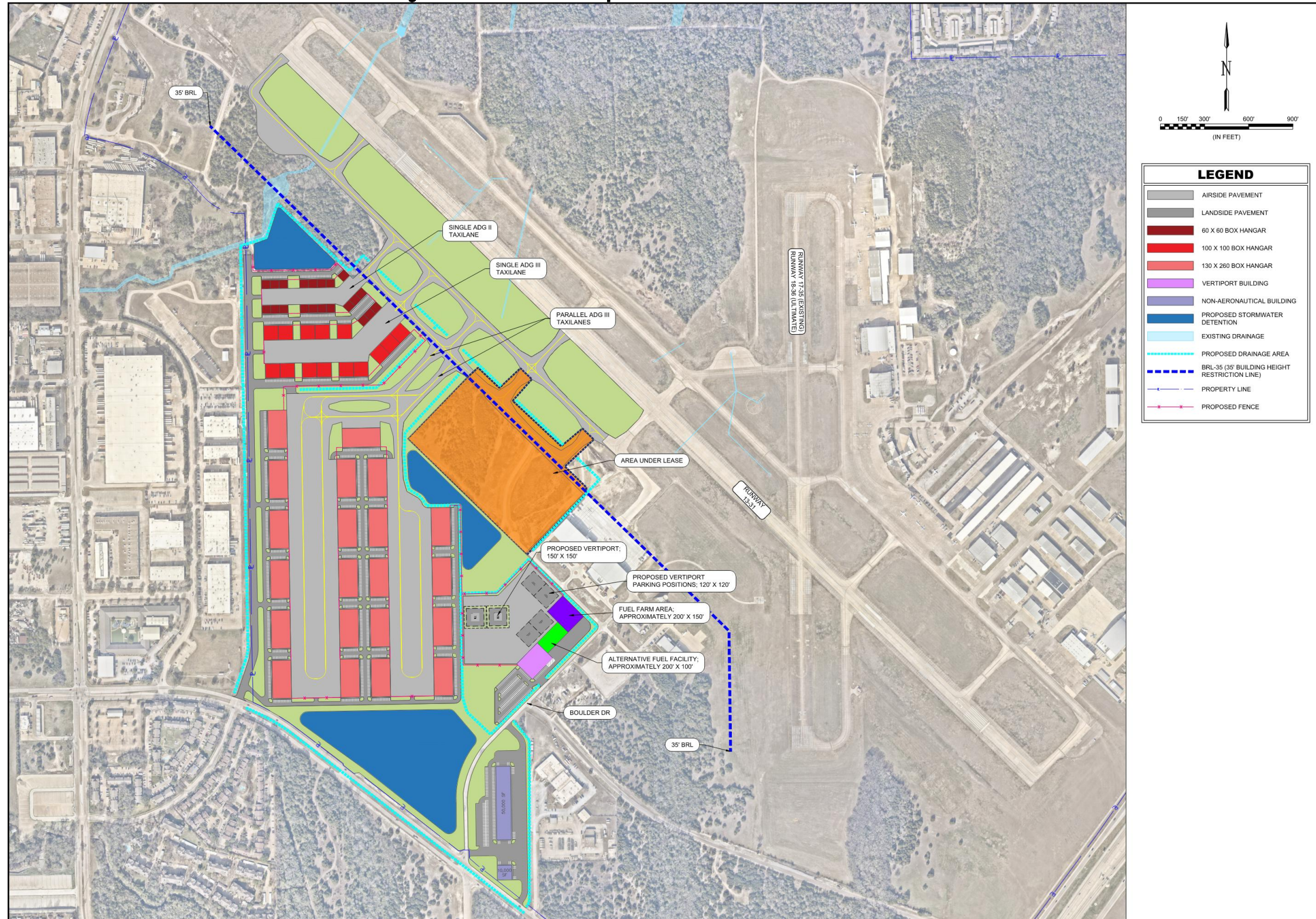
Source: Garver, 2026

Figure 5-12 – Western Development Area - Terminal/Landside Alternative #2



Source: Garver, 2026

Figure 5-13 – Western Development Area - Terminal/Landside Alternative #3



Source: Garver, 2026

Terminal/Landside Alternatives Evaluation and Results

Due to the similar nature of all the terminal/landside alternatives, a formal evaluation of each alternative was not performed as all the alternatives would have received very similar ratings. Consequently, the potential pros and cons of each alternative were discussed with the project steering committee. Based on the discussion, the following preferred alternatives were selected for each development area:

- Eastern Development Area – Terminal/Landside Alternative #4 – The project steering committee selected Terminal/Landside Alternative #4 as the preferred alternative for the eastern development area as the alternative has the least impact to existing leased areas. Additionally, the alternative provides a blend of small and mid-sized hangars in the Taxilane J area, which provides flexibility to support hangar development of different sizes.
- Western Development Area – Terminal/Landside Alternative #3 – The project steering committee selected Terminal/Landside Alternative #3 as the preferred alternative for the western development area as the alternative maximizes the amount of large box hangar space and supports the development of a traditional fuel farm in close proximity to existing hangar development.

Preferred Development Concept – Environmental Review

The combined preferred development concept, shown in **Figure 5-14**, has been reviewed to identify potential environmental factors that may influence the timing and environmental clearances required for future development.

Federal Aviation Administration (FAA) orders and policies related to the National Environmental Policy Act (NEPA) were used to conduct the analysis. In general, environmental factors are grouped based on their anticipated level of impact. These groupings are based on currently available information and are subject to change. Airport personnel should coordinate directly with TxDOT Aviation prior to any capital projects to determine the environmental clearances necessary to support a project's implementation.

Limited or No Environmental Impact Anticipated

The following environmental factors are anticipated to have no or limited impact on future development at RBD:

- Air Quality – Temporary impacts during construction are expected. An air emissions inventory may be required by the Texas Commission on Environmental Quality (TCEQ) and, if necessary, will be completed as part of the preliminary engineering/design processes prior to construction activities taking place.
- Coastal Barriers & Coastal Zone Barriers – The coast is over 250 miles from the Airport; therefore, these resources are not affected.
- Federally Listed Endangered and Threatened Species – There are no known protected species at the Airport. However, future coordination may be required with the U.S. Fish and Wildlife Service (USFWS) and the Texas Parks and Wildlife Department (TPWD) to confirm this as part of future projects.
- Energy Supplies, Natural Resources and Sustainable Design – The preferred development alternative is anticipated to have minimal impacts on the area's natural resources and energy supplies.
- Light Emissions and Visual Effects – The future development of RBD is not expected to have a significant impact on light emissions or other visual effects in the area.
- Historical and Archaeological – No previously recorded historical or archaeological sites were found to be located within the development area during a file search for cultural, historical, and archeological sites. The closest historical site is the Monroe Shops, located approximately 4.5 miles northeast of the Airport.
- Wild and Scenic Rivers – There are no wild and scenic rivers in the development area.
- Hazardous Materials – There are no known hazardous material sites in the area.



- Solid Waste – There are no known locations involved in the preferred development alternative where solid waste is present. An online inquiry was completed using the Texas Commission on Environmental Quality website.
- Water Quality – Water quality is not expected to be impacted by the development. However, a more in-depth review may be necessary for specific development projects.
- Biotic Resources – No new impacts to biotic resources are anticipated, however additional review may be necessary prior to project design.
- Department of Transportation Act, Section 4(f) – No Section 4(f) impacts are anticipated as part of the preferred development alternative.
- Induced Socioeconomic – No property is proposed to be acquired. Consequently, no socioeconomic impacts are expected as a result of the preferred development alternative.
- Social Impacts – The preferred development alternative is not expected to have any social impacts.
- Farmlands – All of airport property is classified as not prime farmland. Consequently, no farmland impacts are anticipated.
- Compatible Land-Use – No property is proposed to be acquired around the airport, and no new incompatible land-uses are expected to be introduced.

Anticipated Environmental Impacts

The following environmental factors are anticipated to have an impact on future development at RBD:

- Floodplains – An online query was completed through the Federal Emergency Management Agency (FEMA) Flood Map Service Center to identify areas on or around the Airport affected by the existing floodplain. Floodplains do exist on the northside of airport property and will need to be a consideration when Taxiway E is extended to the approach end of Runway 13.
- Wetlands – Existing wetlands are present on both the eastern and western sides of the Airport and may impact future developments. Wetland delineation work is anticipated to be required for development in the area north of Challenger Drive on the east side of the Airport and when Taxiway E is extended to the approach end of Runway 13.
- Noise – Multiple noise sensitive communities are present around RBD. Consequently, the extension of Runway 18-36 is anticipated to require additional analysis related to noise impacts on the surrounding community.



DECLARED DISTANCES FOR RUNWAY 13-31	
RUNWAY 13	
EXISTING	PROPOSED
TORA: 6766'	TORA: 6766'
TODA: 7136'	TODA: 7136'
ASDA: 6622'	ASDA: 6585'
LDA: 5537'	LDA: 5500'
RUNWAY 31	
EXISTING	PROPOSED
TORA: 6051'	TORA: 6051'
TODA: 7136'	TODA: 7136'
ASDA: 7101'	ASDA: 7101'
LDA: 6601'	LDA: 6601'

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