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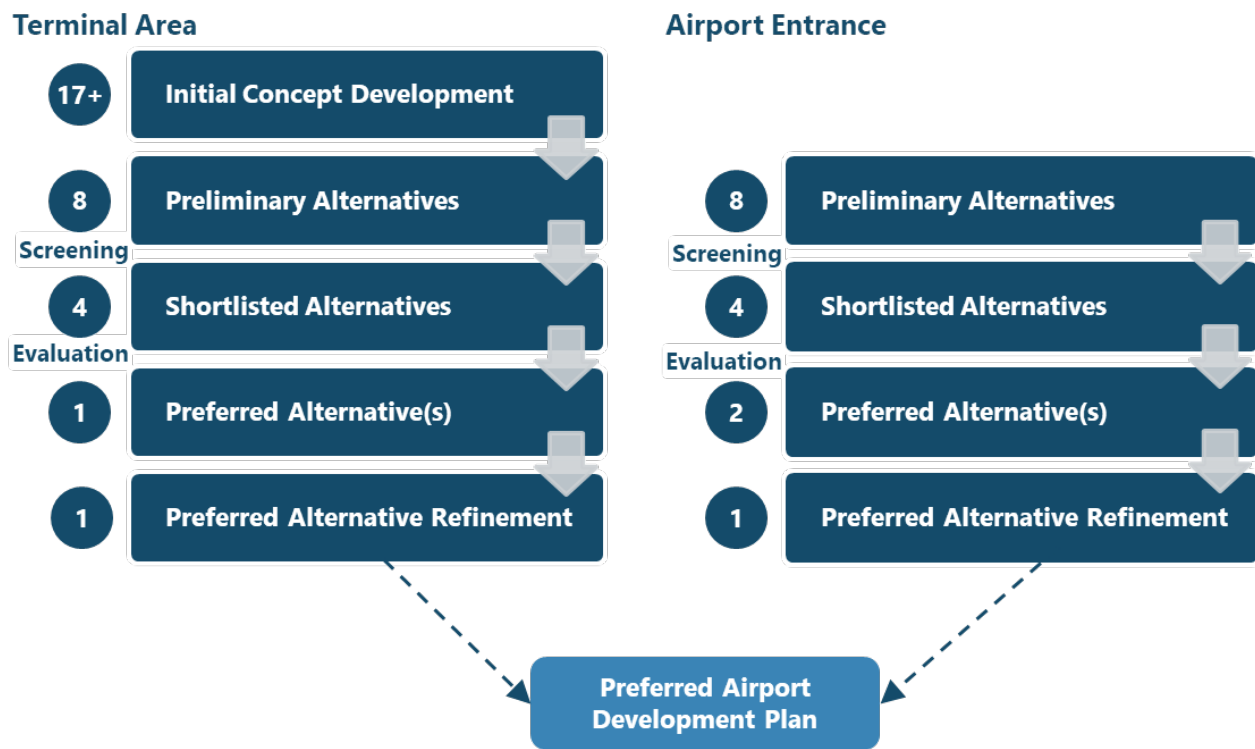
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## 5. ALTERNATIVES DEVELOPMENT AND ANALYSIS

The focus of the alternatives development and analysis was to identify and evaluate Airport development alternatives that could accommodate forecast aviation demand through the planning horizon, while providing the flexibility required to adapt to changes in the industry and meet the goals of the DoA and its stakeholders.

To satisfy these objectives, several development alternatives were identified, screened, evaluated, and refined. The Master Plan included two separate development alternatives screening and evaluation processes: (1) terminal area (terminal, airside, landside, and support facilities); and (2) Airport entrance. This chapter provides an overview of the alternatives development and analysis process (see **Exhibit 5-1**), which was used to determine the preliminary preferred alternative. Refinement of the preliminary preferred alternative and the description of the Preferred Airport Development Plan are discussed in Chapter 6.

EXHIBIT 5-1 ALTERNATIVES DEVELOPMENT AND ANALYSIS PROCESS



NOTE:  
The numbers in circles indicate the number of concepts and alternatives developed for each stage of the process.  
SOURCE: Ricondo & Associates, Inc., October 2025.

## 5.1 ALTERNATIVES DEVELOPMENT AND ANALYSIS PROCESS

The general process for the alternatives analysis entailed the following:

### ***Terminal Area (Terminal, Airside, Landside, and Support Facilities) Alternatives***

- Identify the required facility capacity to accommodate forecast demand through PAL 3.
- Develop early opportunity zones for development needs to accommodate demand.
- Develop individual concepts based on opportunity zones identified.
- Integrate concepts to meet the requirements for each of the four major categories:
  - Terminal
  - Airside
  - Landside
  - Support facilities
- Screen integrated concepts using defined criteria and consider unrelated terminal impacts to eliminate or modify concepts that are not feasible for further consideration.
- Advance and augment the shortlisted alternatives from the integrated concepts.
- Refine the shortlisted alternatives.
- Evaluate the shortlisted alternatives through increasingly detailed evaluation.
- Identify and refine the preferred alternative(s).
- Select the preferred alternative.

### ***Airport Entrance Alternatives***

- Recognize the required capacity to accommodate demand through PAL 3.
- Develop preliminary concepts.
- Assess the capabilities of the preliminary concepts to accommodate future demand.
- Screen the preliminary concepts to eliminate or modify concepts that are not feasible for further consideration.
- Select and improve the shortlisted alternatives from the initial concepts.
- Refine the shortlisted alternatives.
- Evaluate the shortlisted alternatives through increasingly detailed evaluation.
- Identify the preliminary preferred alternative(s) for refinement.
- Coordinate with stakeholders (North Central Texas Council of Governments [NCTCOG] and the City's Department of Transportation and Public Works [TPW]) to select the preferred alternative.
- Select preferred alternative(s).

## 5.2 TERMINAL AREA ALTERNATIVES DEVELOPMENT AND ANALYSIS (TERMINAL, AIRSIDE, LANDSIDE, AND SUPPORT FACILITIES)

This section describes the alternatives analysis process for the terminal area.

### 5.2.1 INITIAL CONCEPT DEVELOPMENT

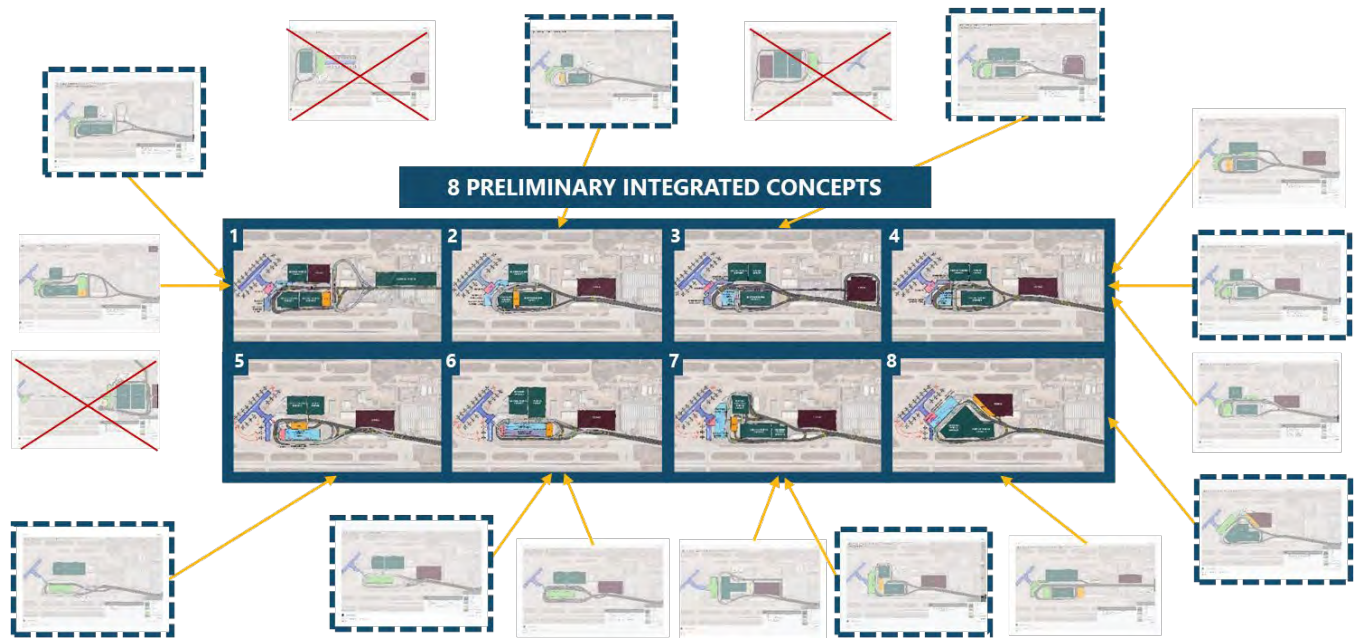
Prior to the initial concept development, Stakeholder Workshop #3 was held to explore areas of development or redevelopment opportunities. During this workshop, the facility requirements for the terminal and landside facilities were reviewed, and stakeholders were asked to identify areas of opportunity to address capacity needs for the terminal and landside components. Ideas gathered from the stakeholder workshop and input received from the DoA were used in the development of initial concepts.

The initial concept development process included a workshop to outline potential facility locations for terminal and landside components to accommodate demand through PAL 3. The definition of each concept followed a set of rules and constraints based on existing airside, landside, and airspace geometry; FAA and Texas Department of Transportation (TxDOT) regulations; and high-level special requirements needed through PAL 3. This resulted in 17 initial concepts that were further assessed for strengths and weaknesses to determine viable concepts to advance to subsequent evaluations. A complete list of the initial concepts can be found in **Appendix I**.

### 5.2.2 PRELIMINARY INTEGRATED CONCEPTS

Components of the initial concepts depicting the greatest potential were merged into eight preliminary integrated concepts for further evaluation, as shown on **Exhibit 5-2**. Certain components in six of the initial concepts were incorporated into the eight preliminary integrated concepts, and three concepts were eliminated in their entirety. The preliminary integrated concepts were further refined to address issues identified during the review process. During Stakeholder Workshop #4, stakeholders were briefed on the preliminary integrated concepts and provided feedback on the initial criteria prior to concept screening.

EXHIBIT 5-2 IDENTIFICATION OF EIGHT PRELIMINARY INTEGRATED CONCEPTS



SOURCES: Nearmap, 2025 (aerial photography – for visual reference only, may not be to scale); Ricondo & Associates, Inc., April 2025.

### 5.2.3 SHORTLISTED ALTERNATIVES

The eight preliminary integrated concepts were refined to a higher level of detail prior to additional screening. The refinement process was informed by additional stakeholder and DoA input received during the preliminary integrated concepts screening.

Four shortlisted alternatives were determined by developing and applying the following comprehensive screening criteria:

- **Flexibility:** ability to accommodate facility development that may emerge differently than planned (e.g., timing, location, size).
- **Relative Cost:** relative measure of comparative capital investment to implement the full concept.
- **Operational Efficiency:** relative measure of the efficiency of activity and operations if the concept is fully implemented.
- **Implementation Complexity:** relative complexity of project and full-concept implementation.
- **Passenger Experience:** perceived passenger experience provided by the full concept compared to existing experience.
- **Non-Terminal Facility Impact:** impacts to adjacent Airport facilities.

The preliminary integrated concepts were screened for each criterion at a high level by the planning team and DoA. Each concept was rated in four levels: less than desirable, moderate, good, and best.

As shown on **Exhibit 5-3**, screening of the eight preliminary integrated concepts led to the selection of four shortlisted alternatives: Alternatives A, B, C, and D. **Exhibit 5-4** presents the four shortlisted alternatives selected for further refinement and evaluation, as well as the foundational preliminary integrated concepts for each shortlisted alternative. As shown, Shortlisted Alternative C reflects a combination of Concepts 3 and 4, and Shortlisted Alternative D reflects a combination of Concepts 7 and 8.

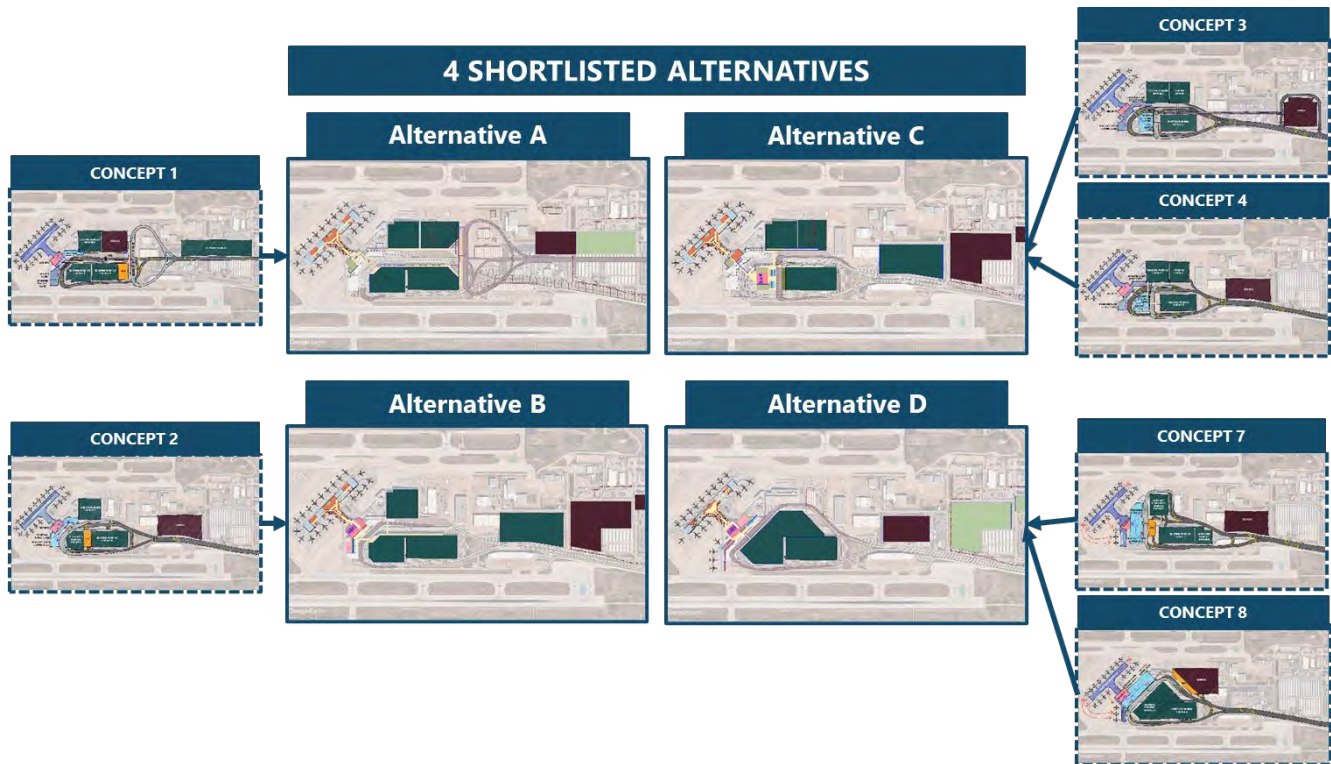
EXHIBIT 5-3 PRELIMINARY INTEGRATED CONCEPT SCREENING AND SELECTION OF SHORTLISTED ALTERNATIVES

Screening Criteria	Concepts							
	1	2	3	4	5	6	7	8
L – Flexibility	☑	☑	☑	☑	X	☑	X	X
T/A – Flexibility	☑	☑	☑	☑	☑	☑	X	☑
L – Relative Cost	☑	☑	☑	☑	X	X	X	X
T – Relative Cost	☑	☑	☑	☑	☑	☑	X	X
L – Operational Efficiency	X	☑	☑	☑	☑	☑	☑	☑
T/A – Operational Efficiency	X	☑	☑	☑	☑	☑	☑	☑
L – Implementation Complexity	☑	X	☑	☑	X	X	☑	☑
T – Implementation Complexity	☑	X	☑	☑	☑	☑	X	X
L – Passenger Experience	X	☑	☑	☑	☑	☑	☑	☑
T – Passenger Experience	X	☑	☑	☑	☑	☑	☑	☑
A – Non-Terminal Facility Impact	X	☑	☑	☑	X	X	X	X
	<b>ALT A</b>	<b>ALT B</b>	<b>ALT C</b>	<b>X</b>	<b>X</b>	<b>X</b>	<b>ALT D</b>	

LEGEND  
 X Less than Desirable    ☑ Good    X Concepted Removed  
 ☑ Moderate    ☑ Best

NOTES: A – Airside; L – Landside; T – Terminal  
 SOURCE: Ricondo & Associates, Inc., October 2025.

EXHIBIT 5-4 IDENTIFICATION OF THE FOUR SHORTLISTED ALTERNATIVES



SOURCES: Nearmap, 2025 (aerial photography – for visual reference only, may not be to scale); Ricondo & Associates, Inc., April 2025; Abstract Group, Inc., October 2024.

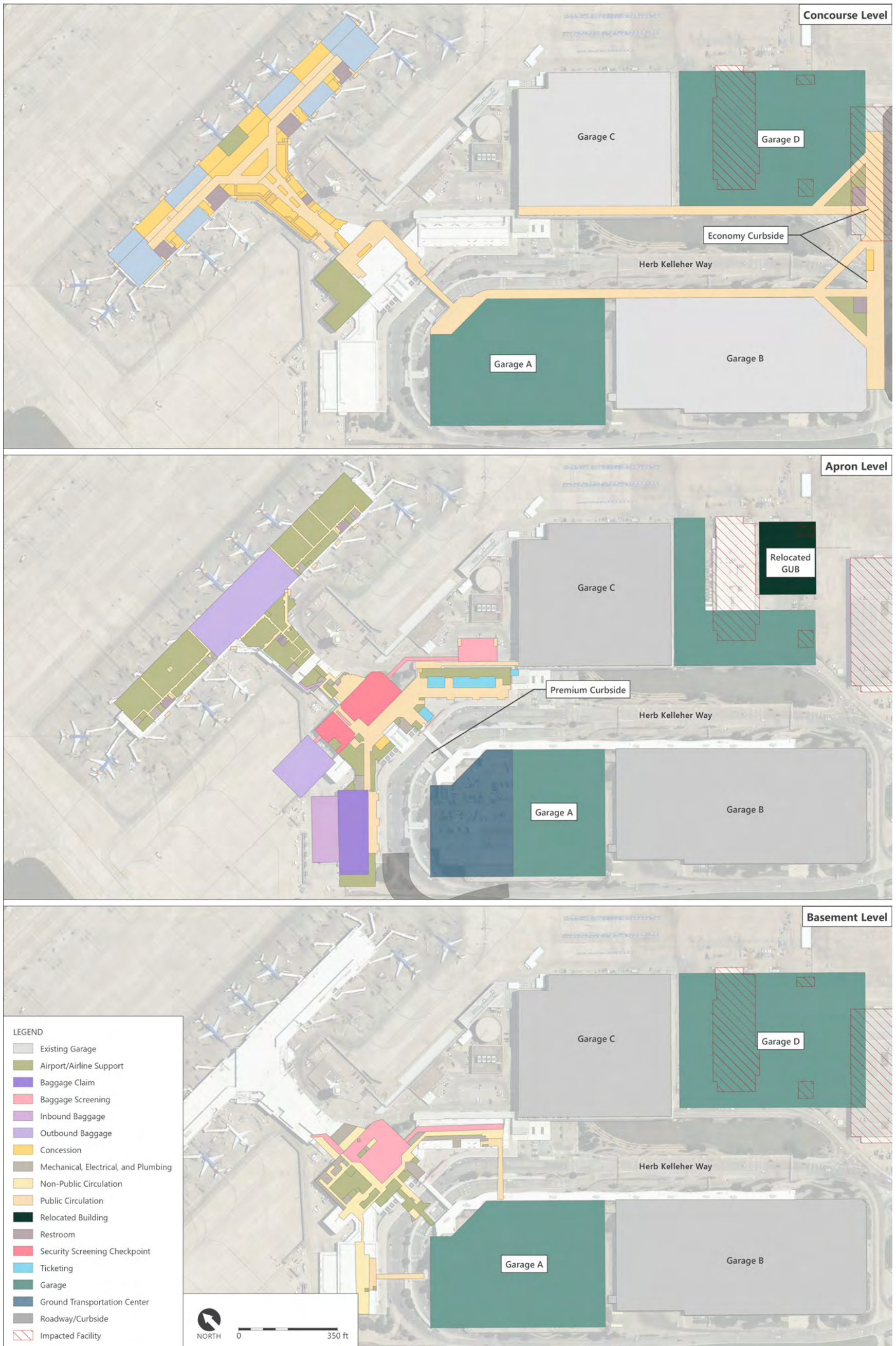
The four shortlisted alternatives were initially shared with the stakeholders during Stakeholder Workshop #5. The shortlisted alternatives are described in detail in the following subsections.

**5.2.3.1 SHORTLISTED ALTERNATIVE A**

As depicted on **Exhibit 5-5**, Shortlisted Alternative A features a minimalist approach for the terminal area enhancement, accommodating capacity needs through small incremental improvements and a 50-foot northward expansion of the concourse. Although minimal for the terminal, this alternative implies a significant landside approach to accommodate the necessary curbside and parking capacity, as shown on **Exhibit 5-6**.

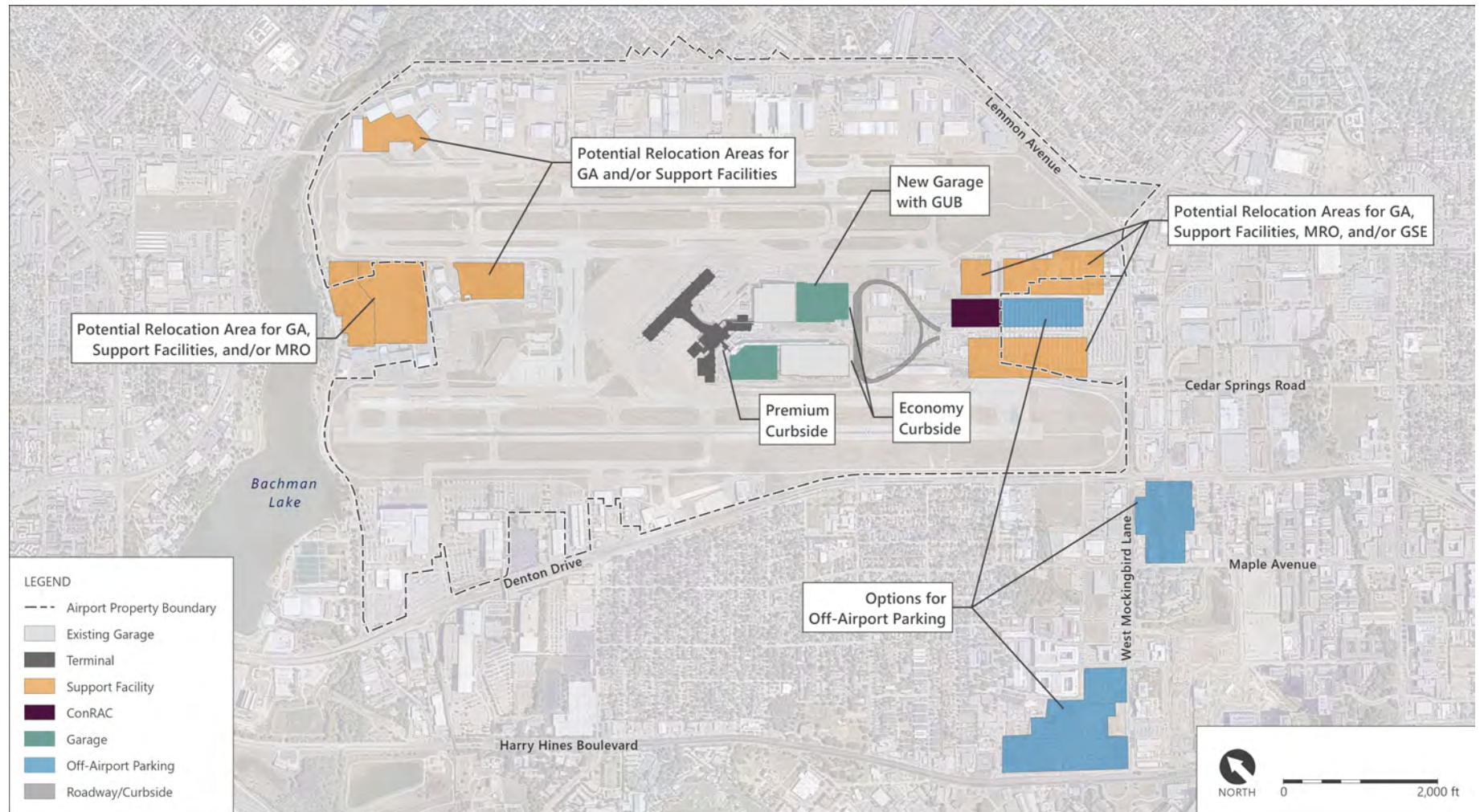
The existing terminal headhouse building would be expanded to accommodate an enlarged BHS, with an additional CBIS separate from the existing location, a split inbound and outbound baggage makeup area, and an expanded baggage claim area. The 50-foot northward expansion of the existing concourse would support additional holdrooms, restrooms, and concessions. All other components (e.g., ticketing and SSCP) would remain in their existing configuration with minimal expansion.

EXHIBIT 5-5 OVERVIEW OF SHORTLISTED ALTERNATIVE A – TERMINAL



NOTE:  
 GUB – General Use Building  
 SOURCES: City of Dallas, June 2025 (aerial photography – for visual reference only, may not be to scale); Ricondo & Associates, Inc., November 2024; Abstract Group, Inc., November 2024.

EXHIBIT 5-6 OVERVIEW OF SHORTLISTED ALTERNATIVE A – LANDSIDE



NOTES: ConRAC – Consolidated Rent-a-Car; GA – General Aviation; GSE – Ground Service Equipment; GUB – General Use Building; MRO – Maintenance, Repair, and Overhaul

SOURCES: Nearmap, March 2025 (aerial photography – for visual reference only, may not be to scale); City of Dallas, Department of Aviation, *Dallas Love Field Airport Layout Plan*, June 2019 (property boundary); Ricondo & Associates, Inc., November 2024; Abstract Group, Inc., November 2024.

As shown in Exhibit 5-5 and Exhibit 5-6, the landside improvements feature a new Airport entrance off West Mockingbird Lane, northeast of the existing entrance, leading to both economy and premium passenger curbside options. The economy curbside would provide access to the terminal via pedestrian bridges, while the premium passenger curbside would allow for passenger pick-up and drop-off at the terminal for a fee. The new alignment provides additional opportunities for landside or airside development. All parking requirements would be accommodated in proximity to the economy and premium curbside areas, providing walkway access for passengers to the terminal. Parking would be supported by existing parking Garages B and C, reconstructed Garage A, and a new parking garage constructed adjacent to Garage C. An off-Airport parking structure is proposed to accommodate an economy parking option, although it is not required to accommodate parking demand. A newly constructed ground transportation center (GTC) would be located in the reconstructed Garage A on the apron level.

Key features of Shortlisted Alternative A include the following:

- Reduced congestion on premium vehicle curbside for better traffic management
- Congestion pricing to help balance roadway load during peak periods
- Revenue from premium curbside usage fees to offset construction and maintenance costs of economy curbside
- Increased passenger choice
- Limited changes to the terminal footprint

Program deficiencies identified for Shortlisted Alternative A include the following:

- Headhouse space deficiencies that cannot be accommodated in the existing terminal area
- Split CBIS facilities
- Wayfinding challenges and long walking distances for economy curbside passengers
- Significant impact on GA and support facilities to support new roadway alignment and garage development

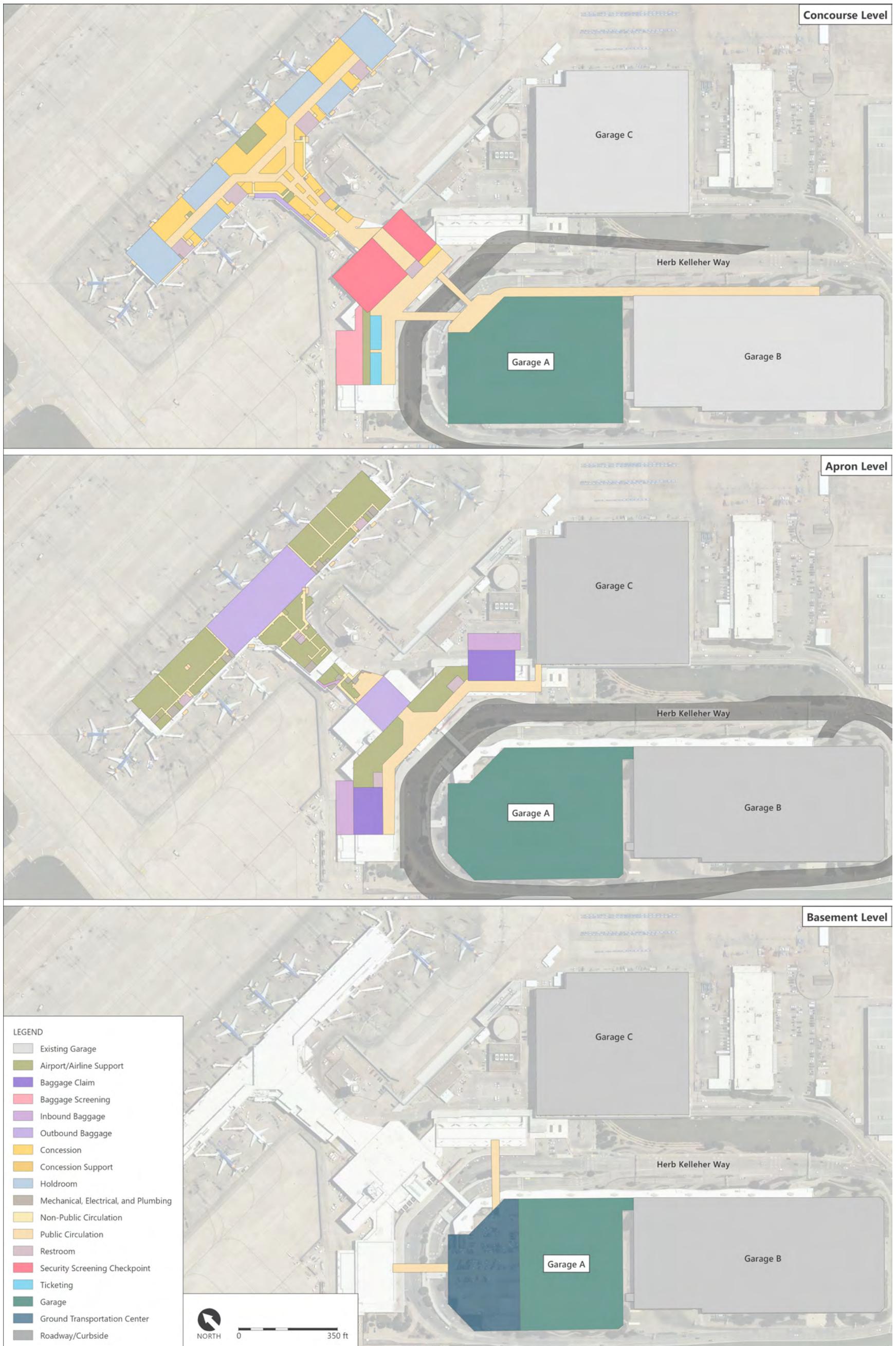
### 5.2.3.2 SHORTLISTED ALTERNATIVE B

As depicted on **Exhibit 5-7**, Shortlisted Alternative B meets future requirements through the construction of a two-level terminal building and adjacent curbside, in addition to a 50-foot northward expansion of the concourse.

The 50-foot northward expansion of the existing concourse would accommodate additional holdrooms, restrooms, and concessions. The two-level terminal building would be constructed within the existing terminal footprint. Ticketing, the CBIS, and the SSCP would be provided on the upper level (concourse level). Separate inbound and outbound baggage areas and baggage claim would be provided on the lower level (apron level), all of which would require split operations to accommodate demand.

The two-level terminal building would be supported by a split-level curbside to support the necessary requirements. The upper level would be designated for departures, allowing passengers to proceed directly from check-in, through the SSCP, and to the concourse without changing levels. The lower level of the terminal would be designated for arrivals, allowing passengers to exit directly from the two baggage claim halls to the expanded arrivals curbside.

EXHIBIT 5-7 OVERVIEW OF SHORTLISTED ALTERNATIVE B – TERMINAL



SOURCES: City of Dallas, June 2025 (aerial photography – for visual reference only, may not be to scale); Ricondo & Associates, Inc., November 2024; Abstract Group, Inc., November 2024.

A GTC would be located in the reconstructed Garage A on the basement level. Existing Garages B and C would remain unchanged. Additionally, to accommodate demand, a three-level economy parking structure would be constructed at the existing rental car location, and the rental car facilities would be relocated to an off-Airport ConRAC facility.

This alternative minimally impacts the existing landside, GA, and support facilities, as depicted on **Exhibit 5-8**.

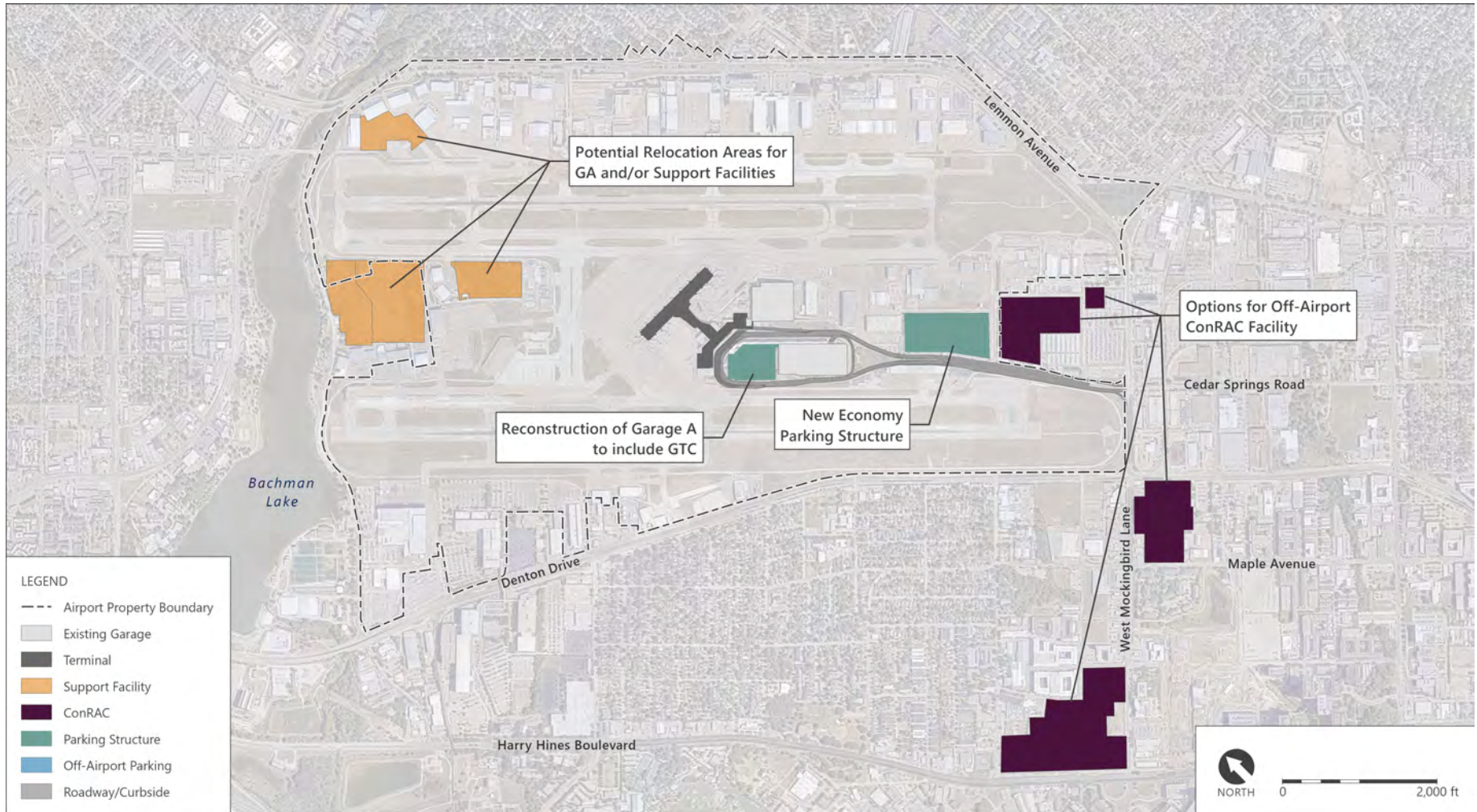
Key features of Shortlisted Alternative B include the following:

- Segregated arrival and departure flows
- Additional curbside frontage for both arrivals and departures
- Reduced curbside demand resulting from the GTC location
- Improved proximity of GTC to ticketing and baggage claim for passengers
- Minimal impact to existing GA and support facilities

Program deficiencies identified for Shortlisted Alternative B include the following:

- Implementation challenges with refurbishment while keeping the terminal operational
- Split baggage claim presents operational and passenger wayfinding challenges
- Split CBIS and inbound and outbound baggage areas present operational challenges
- Maintaining existing roadway geometry hinders the curbside operation

EXHIBIT 5-8 OVERVIEW OF SHORTLISTED ALTERNATIVE B – LANDSIDE



NOTES: ConRAC – Consolidated Rent-a-Car; GA – General Aviation; GTC – Ground Transportation Center

SOURCES: Nearmap, March 2025 (aerial photography – for visual reference only, may not be to scale); City of Dallas, Department of Aviation, *Dallas Love Field Airport Layout Plan*, June 2019 (property boundary); Ricondo & Associates, Inc., November 2024; Abstract Group, Inc., November 2024.

### 5.2.3.3 SHORTLISTED ALTERNATIVE C

As depicted on **Exhibit 5-9**, Shortlisted Alternative C provides capacity by relocating some of the terminal processing functions, such as ticketing, the SSCP, the CBIS, and outbound baggage, across the existing roadway into a new building constructed on the existing Garage A site, in addition to a 50-foot northward expansion of the existing concourse.

Supported by a new dual-level curbside, a departures-level curbside would be provided on the upper level (concourse level) of the new terminal, which would include ticketing and the SSCP. A lower level (apron level) curbside would support the newly constructed GTC in the new building, which would also contain the consolidated CBIS area to accommodate forecast demand without a split system. The basement level would include the full outbound baggage makeup area. Furthermore, the existing curbside would be designated as an arrivals-only curbside, adjacent to the expanded baggage claim and inbound baggage area.

A 50-foot northward expansion of the existing concourse would accommodate additional holdrooms, restrooms, and concessions.

Parking demand would be supported by existing Garages B and C, a new Garage D, and an economy parking lot constructed at the existing rental car facilities location. The displaced cargo and GUB would be incorporated within the new Garage D development. A remote ConRAC facility is proposed at the existing Parking Spot public parking location, which would require acquisition of that property. This alternative minimally impacts the existing landside, GA, and support facilities, as depicted on **Exhibit 5-10**.

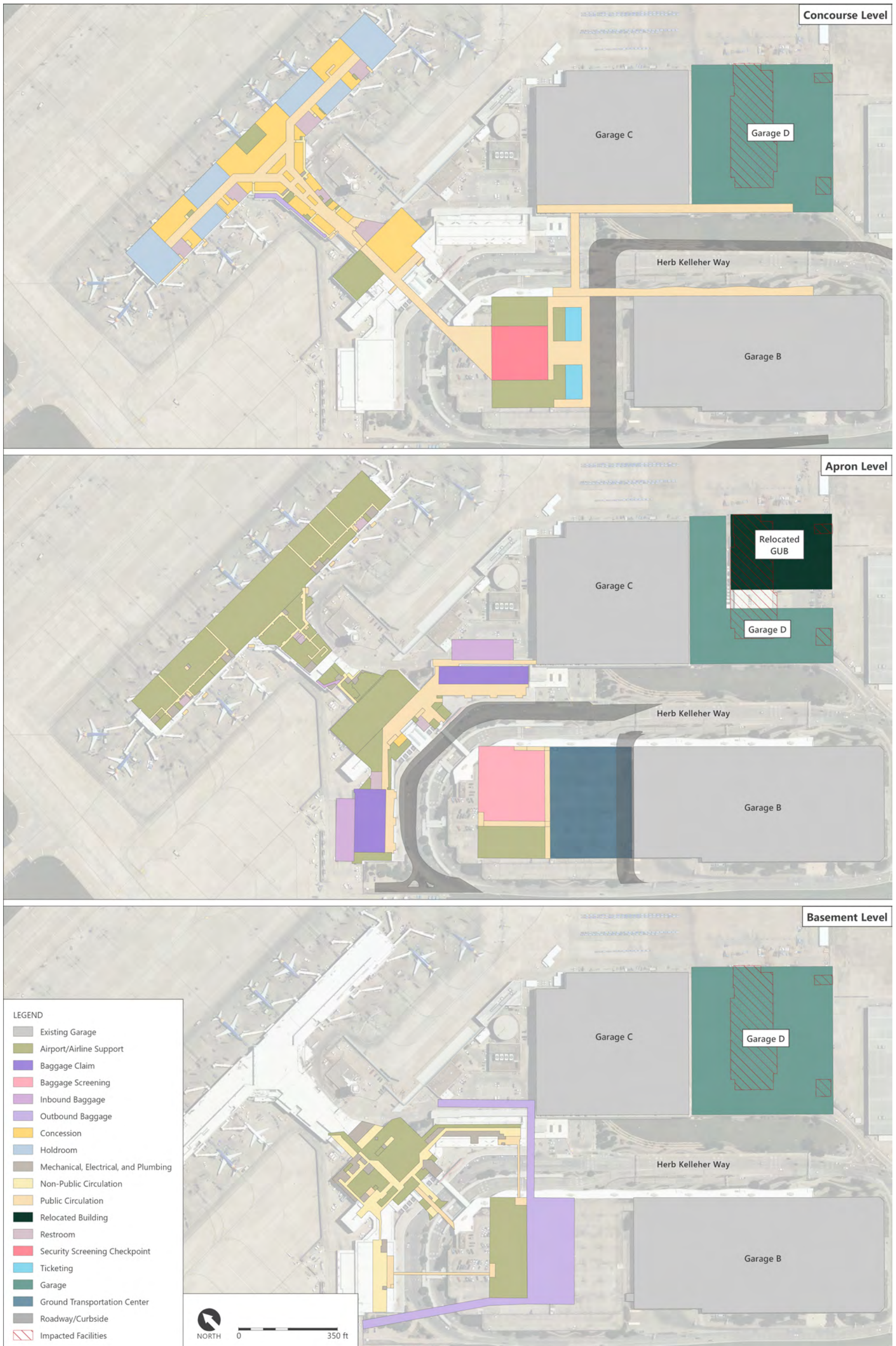
Key features of Shortlisted Alternative C include the following:

- Reduced curbside demand resulting from the GTC location
- Departures roadway and GTC construction on isolated site
- ConRAC facility accommodated off-Airport
- Segregated arrival and departure flows
- Minimal impact to remainder of landside, GA, and support facilities
- Limited changes to terminal footprint

Program deficiencies identified for Shortlisted Alternative C include the following:

- Split baggage claim presents operational and passenger wayfinding challenges
- Critical systems placed below the water table level
- Garage A parking space loss (However, parking spaces would be accommodated by building an economy parking lot at the intersection of Herb Kelleher Way and Tom Braniff Lane.)

EXHIBIT 5-9 OVERVIEW OF SHORTLISTED ALTERNATIVE C – TERMINAL

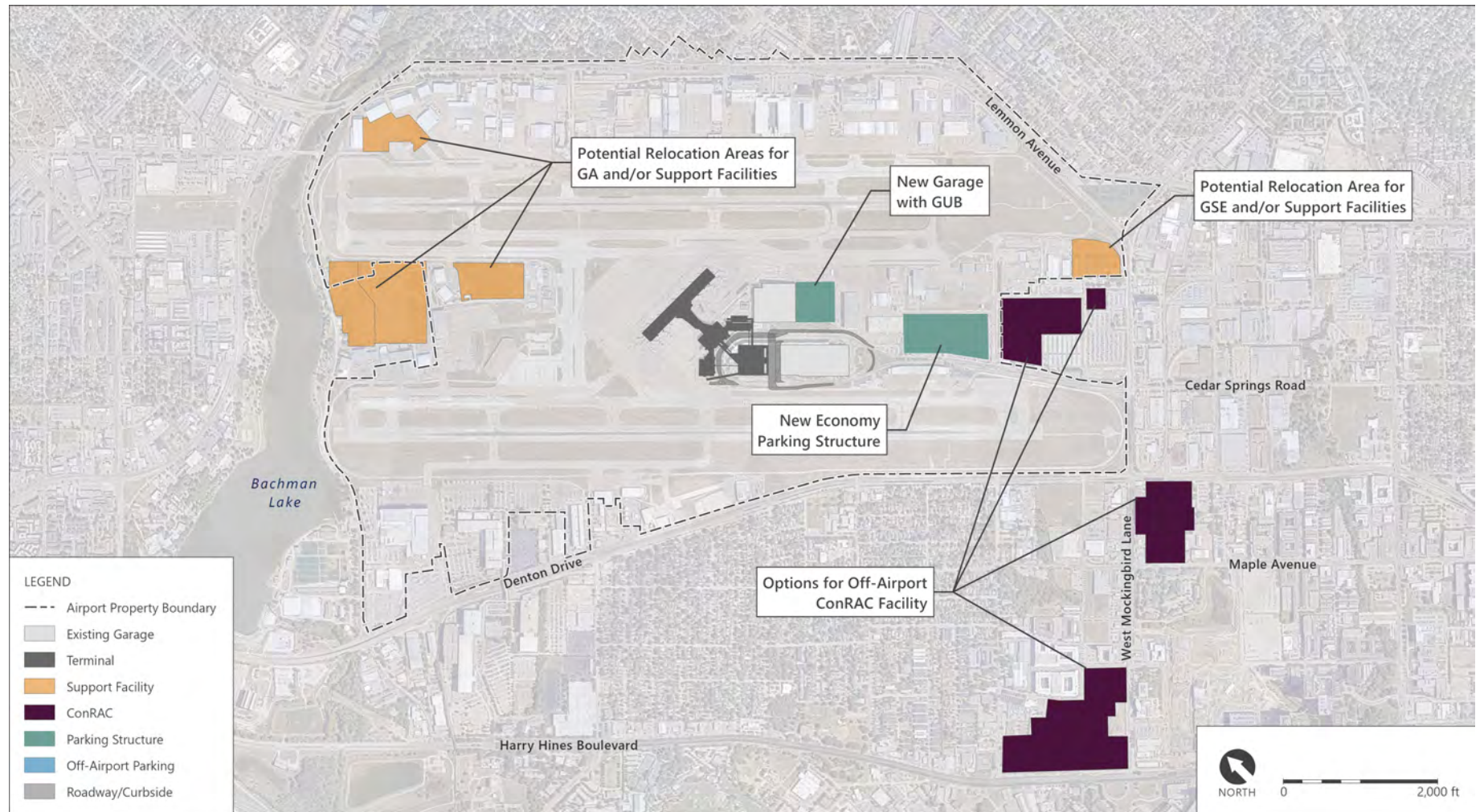


NOTE:

GUB – General Use Building

SOURCES: City of Dallas, June 2025 (aerial photography – for visual reference only, may not be to scale); Ricondo & Associates, Inc., November 2024; Abstract Group, Inc., November 2024.

EXHIBIT 5-10 OVERVIEW OF SHORTLISTED ALTERNATIVE C – LANDSIDE



NOTES: ConRAC – Consolidated Rent-a-Car; GA – General Aviation; GSE – Ground Service Equipment; GUB – General Use Building

SOURCES: Nearmap, March 2025 (aerial photography – for visual reference only, may not be to scale); City of Dallas, Department of Aviation, *Dallas Love Field Airport Layout Plan*, June 2019 (property boundary); Ricondo & Associates, Inc., November 2024; Abstract Group, Inc., November 2024.

#### 5.2.3.4 SHORTLISTED ALTERNATIVE D

As depicted on **Exhibit 5-11**, Shortlisted Alternative D includes the reconfiguration of the terminal to match the existing concourse alignment, and realigned terminal area roadways to allow additional curbside capacity. It also includes the development of a large, single, centrally located garage to accommodate most of the parking demand.

The terminal configuration would require the demolition of the existing ticketing and baggage claim areas, and it would provide a two-story processor constructed near the existing terminal footprint. A two-level roadway would separate departure (concourse level) from arrival (apron level) flows, and the curbsides would be straightened to improve operational efficiency.

The holdroom, concession, and restroom requirements would be accommodated by reducing demand on the existing concourse with the relocation of 4 gates from the existing concourse to a new concourse southwest of the existing facilities. The existing concourse would maintain the same footprint, but its interior configuration would be optimized for the remaining 16 gates.

As shown on **Exhibit 5-12**, existing Garages A and C would be demolished, and a garage campus would be constructed central to the new terminal roadways to accommodate the most demand. Within the new parking structure, a GTC would be located near ticketing and baggage claim. An economy parking structure would be required for an additional 2,300 spaces to accommodate PAL 3 demand. The ConRAC facility would be constructed at the existing rental car facilities location.

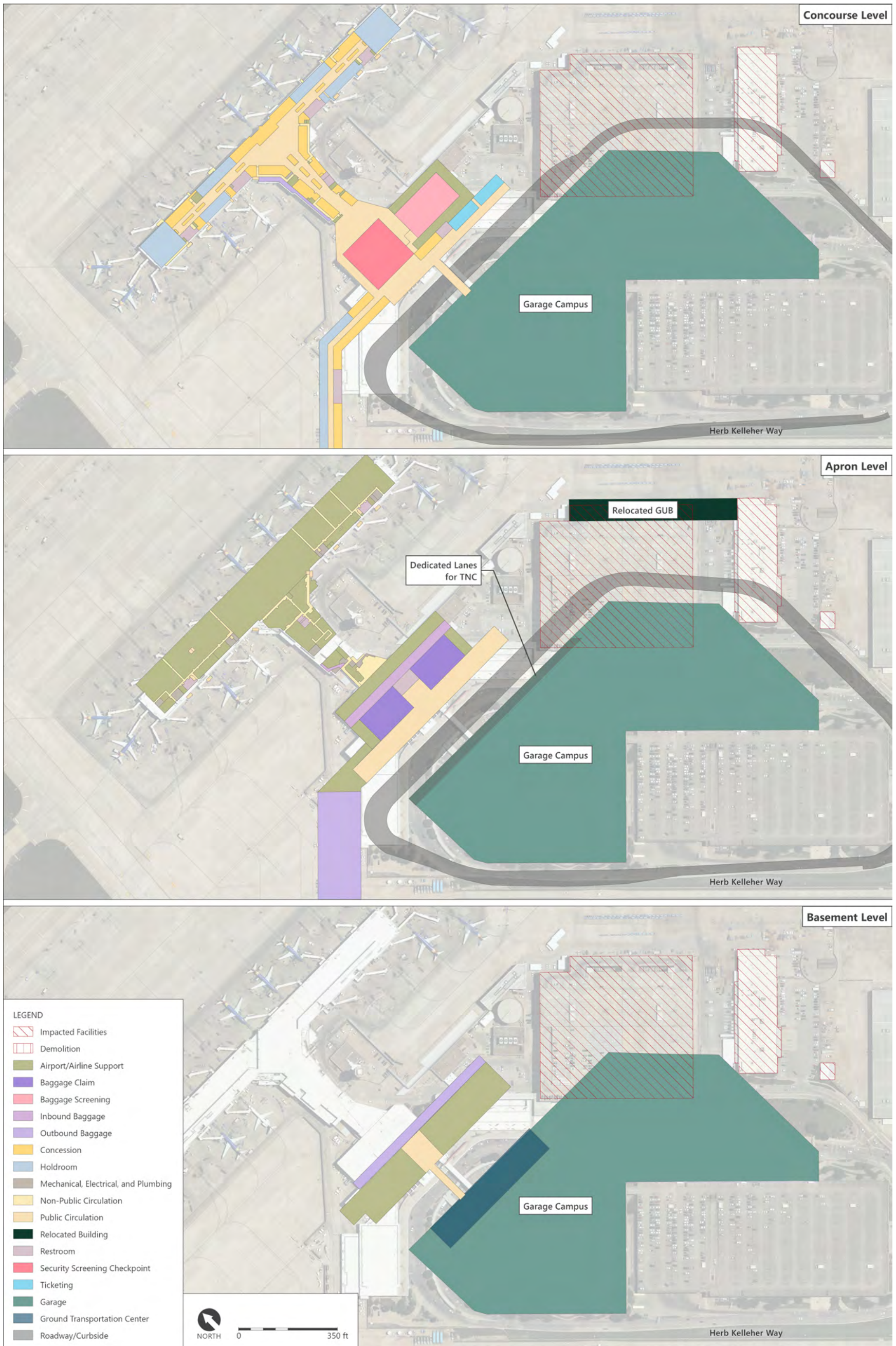
Key features of Shortlisted Alternative D include the following:

- Intuitive wayfinding
- Optimal curbside operation with long and straightened curbsides
- Segregated arrival and departure curbsides
- Large, centralized garage campus with short walking distances
- Improved LOS and interior reconfiguration in the existing concourse by reducing the number of gates to 16
- Relocation of 4 gates to a new concourse southwest of the existing facilities

Program deficiencies identified for Shortlisted Alternative D include the following:

- Implementation challenges during construction while keeping the terminal and curbside operational
- Requires reconfiguration of existing apron flows to support the 4 new southwestern contact gates located on RON Apron C
- Increased aircraft pushback conflicts in the cul-de-sac between existing gates and new southwestern contact gates

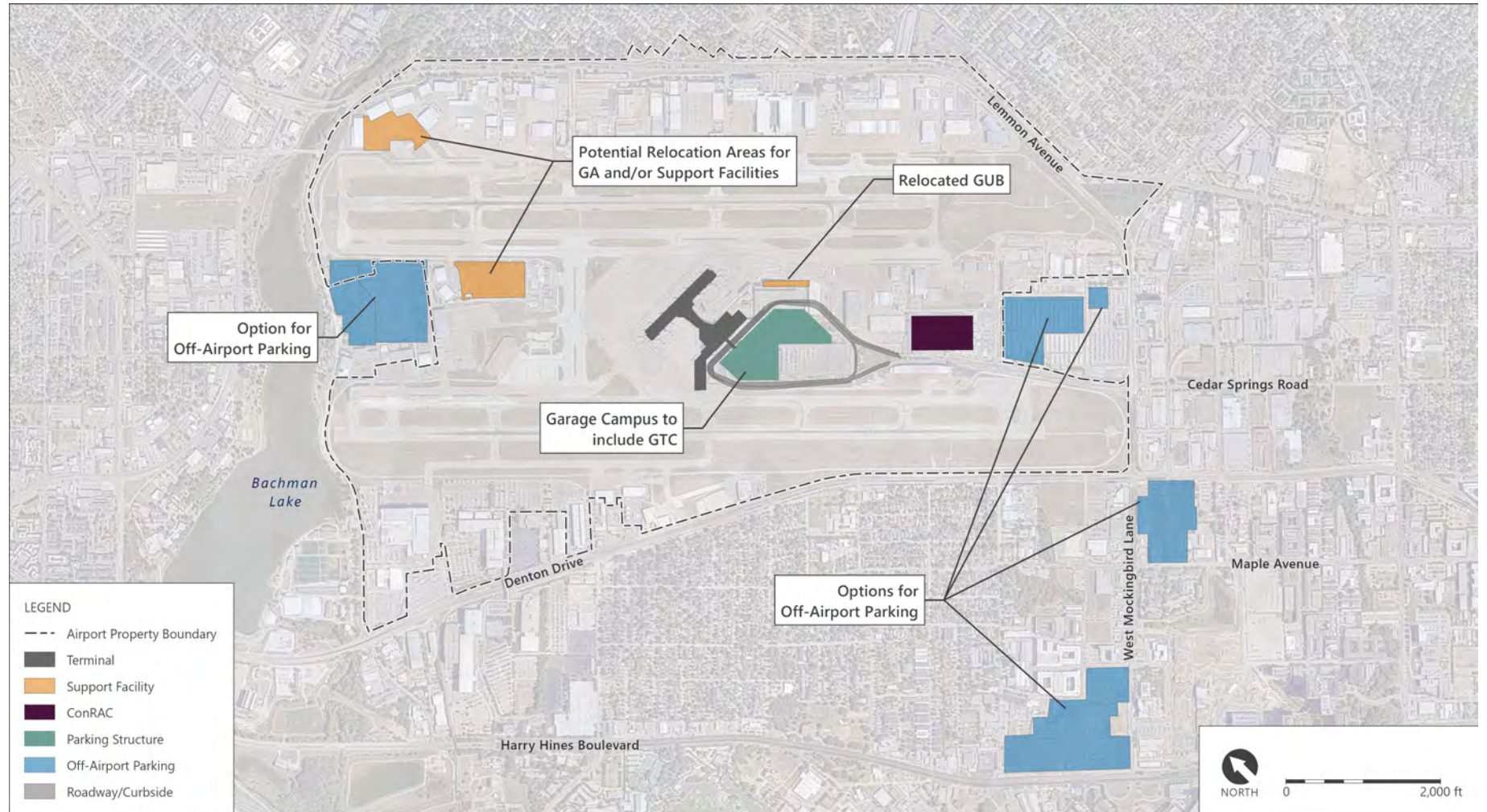
EXHIBIT 5-11 OVERVIEW OF SHORTLISTED ALTERNATIVE D – TERMINAL



NOTES: GUB – General Use Building; TNC – Transportation Company Network

SOURCES: City of Dallas, June 2025 (aerial photography – for visual reference only, may not be to scale); Ricondo & Associates, Inc., November 2024; Abstract Group, Inc., November 2024.

EXHIBIT 5-12 OVERVIEW OF SHORTLISTED ALTERNATIVE D – LANDSIDE



NOTES: ConRAC – Consolidated Rent-a-Car; GA – General Aviation; GTC – Ground Transportation Center; GUB – General Use Building  
 SOURCES: Nearmap, March 2025 (aerial photography – for visual reference only, may not be to scale); City of Dallas, Department of Aviation, *Dallas Love Field Airport Layout Plan*, June 2019 (property boundary); Ricondo & Associates, Inc., November 2024; Abstract Group, Inc., November 2024.

## 5.2.4 PRELIMINARY PREFERRED ALTERNATIVE

The shortlisted alternatives were further refined to enhance operational capability and feasibility, and were evaluated using criteria developed for terminal, airside, landside, and support facilities to establish the preliminary preferred alternative. Through coordination with DoA staff, weighting was applied to the evaluation criteria based on DoA goals and objectives. The refined shortlisted alternatives and evaluations were shared with the stakeholders during Stakeholder Workshop #6. **Exhibit 5-13** presents the evaluation results for the terminal, airside, landside, and support facilities components.

The evaluation criteria for each facility were given a weighting established through coordination with the DoA; the weighted totals were summed, as shown in the evaluation matrix summary presented on **Exhibit 5-14**. Further evaluation of the weighted totals for each facility revealed Alternative C as the preliminary preferred alternative. The highest-ranking key components of Alternative C were the following:

- **Passenger experience:** wayfinding, concessions serviceability, and flexibility to add additional non-essential services.
- **Outbound baggage handling:** layout flexibility and relative cost.
- **Implementation:** development complexity.
- **Curbside location and performance:** wayfinding and curbside capacity/operation.
- **Circulation roadway operational performance and wayfinding:** decision distances, weave/merge, and vehicle queuing.
- **Landside constructability:** customer impact and construction duration/phasing.
- **Gate layout:** aircraft RON efficiencies and growth potential.

## 5.3 AIRPORT ENTRANCE ALTERNATIVES DEVELOPMENT AND ANALYSIS

The Airport entrance alternatives development and analysis process was completed separate from the terminal area alternatives process. This section describes the Airport entrance alternatives development and analysis process used to determine the preliminary preferred alternatives.

### 5.3.1 NEED FOR IMPROVEMENT TO AIRPORT ENTRANCE

The Airport currently has one entrance/exit roadway used to move passengers to and from the Central Terminal Area (CTA). Due to commuters and Airport travelers on West Mockingbird Lane, heavy congestion is experienced during peak hours at the entrance location of West Mockingbird Lane and Cedar Springs Road, and further deterioration of traffic conditions is anticipated during the PAL 3 peak hour. To alleviate existing and projected congestion, and to accommodate traffic volume during the PAL 3 peak hour, improvement alternatives were defined to provide adequate LOS for both Airport and background traffic movements. However, prior to the development of improvement alternatives, optimization of the existing signalized intersection of West Mockingbird Lane and Cedar Springs Road was considered. This analysis indicated a signalized intersection, including all existing traffic movements, would not be able to accommodate the projected traffic demand; therefore, a grade separation is needed to provide the capacity for projected demand. In addition, the analysis showed the adjacent intersection of West Mockingbird Lane and Denton Drive would require improvements to adequately accommodate future projected demand; therefore, all entrance alternatives assume eastbound dual left-turn lanes at this intersection would be in place.

EXHIBIT 5-13 ALTERNATIVES EVALUATION MATRICES

TERMINAL	PASSENGER EXPERIENCE						INBOUND PROCESS			OUTBOUND PROCESS					IMPLEMENTATION			TERMINAL FOOTPRINT
	Walking Distance	Wayfinding	Connection Walk Distances	Concessions Program Effectiveness	Concessions Serviceability	Flexibility to Add Additional Non-Essential Services	BHS – Inbound Operational Efficiency	BHS – Customer Experience	Relative Cost	BHS – Layout Flexibility	BHS – Outbound Operational Efficiency	BHS – Airline Operational Impacts	Maintainability	Relative Cost	Development Complexity	Displacement of Existing Airport Facilities	Customer Impacts During Construction	Flexibility of Space
A	Deficient	Marginal	Marginal	Marginal	Deficient	Deficient	Marginal	Sufficient	Deficient	Deficient	Deficient	Marginal	Marginal	Deficient	Marginal	Deficient	Sufficient	Deficient
B	Marginal	Sufficient	Marginal	Sufficient	Marginal	Sufficient	Deficient	Marginal	Deficient	Marginal	Deficient	Marginal	Marginal	Deficient	Sufficient	Deficient	Deficient	Sufficient
C	Marginal	Sufficient	Marginal	Marginal	Sufficient	Sufficient	Deficient	Marginal	Sufficient	Marginal	Deficient	Marginal	Marginal	Deficient	Marginal	Marginal	Marginal	Marginal
D	Sufficient	Deficient	Deficient	Deficient	Marginal	Marginal	Sufficient	Sufficient	Deficient	Marginal	Marginal	Marginal	Marginal	Marginal	Marginal	Deficient	Deficient	Sufficient

LANDSIDE	PASSENGER EXPERIENCE					CIRCULATION ROADWAYS			NEW ROADWAYS	CONSTRUCTABILITY		PUBLIC PARKING			GROUND TRANSPORTATION CENTER		CONSOLIDATED RENT-A-CAR FACILITY		
	Walking Distance	Wayfinding	Premium Fee	Revenue Potential	Curbside Capacity and Operation	Weave and Merge	Decision Distances	Queuing	Relative Cost	Customer Impact	Duration/ Phasing	Terminal Proximity	Vehicular Access/ Wayfinding	Contingent on Land Acquisition	Relative Cost	Walking Distance	Vertical Level Change	Contingent on Land Acquisition	Traffic Impact
A	Deficient	Deficient	Deficient	Sufficient	Sufficient	Sufficient	Sufficient	Sufficient	Deficient	Marginal	Marginal	Marginal	Sufficient	Marginal	Marginal	Sufficient	Marginal	Marginal	Sufficient
B	Sufficient	Sufficient	Sufficient	Deficient	Marginal	Sufficient	Sufficient	Sufficient	Sufficient	Deficient	Deficient	Deficient	Marginal	Marginal	Marginal	Sufficient	Marginal	Deficient	Marginal
C	Marginal	Sufficient	Sufficient	Deficient	Sufficient	Sufficient	Sufficient	Sufficient	Marginal	Sufficient	Sufficient	Deficient	Marginal	Marginal	Marginal	Marginal	Deficient	Deficient	Marginal
D	Sufficient	Sufficient	Sufficient	Deficient	Sufficient	Sufficient	Sufficient	Sufficient	Marginal	Deficient	Marginal	Deficient	Sufficient	Marginal	Deficient	Sufficient	Sufficient	Marginal	Sufficient

AIRSIDE	GATE LAYOUT			CONSTRUCTABILITY			
	Operational Efficiency	Airfield Impacts	RON Efficiencies and Growth Potential	Operational Impact	Duration/ Phasing	Relative Cost	Potential Airside Development
A	Marginal	Marginal	Sufficient	Marginal	Deficient	Marginal	Sufficient
B	Marginal	Marginal	Sufficient	Marginal	Deficient	Marginal	Marginal
C	Marginal	Marginal	Sufficient	Marginal	Deficient	Marginal	Marginal
D	Sufficient	Sufficient	Marginal	Sufficient	Sufficient	Sufficient	Sufficient

SUPPORT	AIRLINE SUPPORT FACILITIES		GENERAL AVIATION FACILITIES		AIRPORT FACILITIES
	Impacts to Existing Facilities	Cost	Impacts to Existing Facilities	Cost	CUP Expansion Capability
A	Deficient	Deficient	Deficient	Deficient	Deficient
B	Sufficient	Sufficient	Sufficient	Sufficient	Sufficient
C	Marginal	Deficient	Marginal	Marginal	Deficient
D	Marginal	Marginal	Marginal	Marginal	Sufficient

**LEGEND**

Sufficient

Marginal

Deficient

NOTES:  
 BHS – Baggage Handling System  
 CUP – Central Utility Plant  
 RON – Remain Overnight  
 SOURCE: Ricondo & Associates, Inc., November 2024.

EXHIBIT 5-14 SHORTLISTED ALTERNATIVES EVALUATION MATRIX SUMMARY

	TERMINAL	LANDSIDE	AIRSIDE	SUPPORT FACILITIES	TOTAL
<b>A</b>	35.75	49.75	11.50		97.00
<b>B</b>	50.00	49.25	10.50		109.75
<b>C</b>	55.75	49.00	10.50		115.25
<b>D</b>	35.00	56.25	15.00		106.25

Preliminary Preferred Alternative

**LEGEND**

Excellent	Very Good	Good	Fair	Poor
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NOTE:

The weighting evaluation was developed in collaboration with the City's Department of Aviation. Support facilities were not captured in the alternative totals, because these facilities are not directly tied to the development of the terminal facilities.

SOURCE: Ricondo & Associates, Inc., February 2025.

### 5.3.2 PRELIMINARY AIRPORT ENTRANCE ALTERNATIVES

Eight preliminary Airport entrance alternatives were defined with the objective of providing adequate capacity for demand levels through PAL 3:

- Alternative 1: Tight Urban Diamond Interchange (TUDI)
- Alternative 2: Diverging Diamond Interchange (DDI)
- Alternative 3: Direct Interchange with Tunnels
- Alternative 4: U-Turn at Airdrome Drive (dedicated to Airport traffic)
- Alternative 5: Roundabout Entrance
- Alternative 6: Displaced Entrance with Elevated Direct Ramps and Realigned Airport Access Road
- Alternative 7: U-Turn at Airdrome Drive with Tunnel
- Alternative 8: Displaced Entrance with Compact Flyovers (DECF)

Each Airport entrance alternative is depicted on **Exhibit 5-15** and described as follows:

#### **Alternative 1 – Tight Urban Diamond Interchange**

For a TUDI, the Cedar Springs Road and West Mockingbird Lane intersection is configured as a single-point urban intersection (SPUI). It accommodates the Airport traffic at-grade. Non-Airport traffic uses a depressed West Mockingbird Lane with a two-lane northbound and two-lane southbound underpass beneath the at-grade diamond intersection.

### ***Alternative 2 – Diverging Diamond Interchange***

A key advantage of a DDI is its ability to enhance traffic flow by eliminating the need for left-turning vehicles to cross opposing traffic, allowing for safer on-ramp merging from an arterial road. In this design, the intersection at West Mockingbird Lane and Cedar Springs Road would be reconfigured into a DDI, where non-Airport traffic uses a depressed West Mockingbird Lane with a two-lane northbound and two-lane southbound underpass beneath the at-grade diamond section, while Airport traffic would be at-grade. Vehicles exiting the Airport southbound onto Cedar Springs Road would use a free right turn.

### ***Alternative 3 – Direct Interchange with Tunnels***

For this alternative, northbound left-turn access from West Mockingbird Lane and eastbound left-turn egress from the Airport are proposed to be tunneled under the intersection of Cedar Springs Road and West Mockingbird Lane, effectively eliminating the two heaviest left-turn movements at the intersection.

### ***Alternative 4 – U-Turn at Airdrome Drive***

This alternative is a modified right-in/right-out intersection configuration. Northbound Airport traffic would continue driving on West Mockingbird Lane past the intersection with Cedar Springs Road to make a U-turn at the West Mockingbird Lane and Airdrome Drive intersection. After the U-turn at Airdrome Drive, Airport traffic would merge onto West Mockingbird Lane southbound and enter the Airport on a free-flow, right-turn ramp.

### ***Alternative 5 – Roundabout Entrance***

This alternative proposes an at-grade roundabout to accommodate Airport entrance traffic, while depressing the through movements on West Mockingbird Lane. Non-Airport traffic will use a two-lane northbound and two-lane southbound West Mockingbird Lane underpass beneath the at-grade roundabout section.

### ***Alternative 6 – Displaced Entrance with Elevated Direct Ramps and Realigned Airport Access Road***

With this alternative, the Airport entrance is displaced north of the existing intersection of West Mockingbird Lane and Cedar Springs Road, therefore avoiding the height restrictions associated with airspace surfaces (e.g., Part 77<sup>1</sup>) currently impacting the existing entrance. For this alternative, Airport-bound vehicles access and egress the CTA via flyovers and direct ramps. A new and realigned access roadway is proposed north of the existing intersection.

### ***Alternative 7 – U-Turn at Airdrome Drive with Tunnel***

This alternative builds on the previous design for the U-turn (see Alternative 4) by incorporating a tunnel, which helps Airport-bound traffic remain in the correct lanes for smoother and more direct access to the terminal entrance, as well as avoid weaving with through traffic.

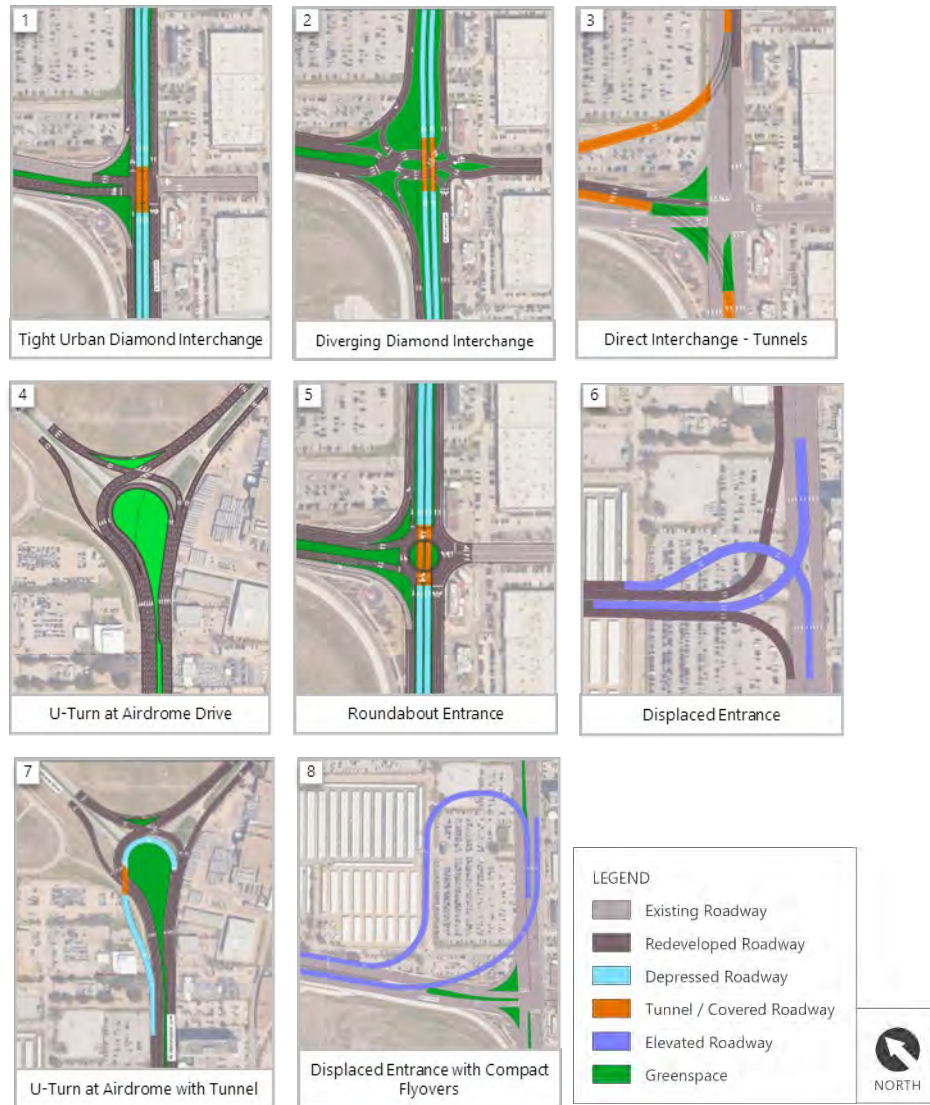
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<sup>1</sup> Part 77 height restrictions associated with Runway 13R-31L airspace set a maximum elevation ranging from 490 feet to 510 feet above mean sea level (AMSL) for the area covering the intersection of West Mockingbird Lane and Cedar Springs Road (Airport entrance). The ground level for the intersection paved area is approximately 471 feet AMSL. Current FAA regulations stipulate that an additional 15 feet needs to be added to any roadway elevation to account for vehicle height. An elevated roadway structure (e.g., flyover) would require a minimum clearance of 16 feet above ground level plus structure (approximately 3 feet). The elevation of the roadway would be approximately 490 feet AMSL, plus the required additional 15 feet for vehicle height. Based on these measurements, any elevated roadway in the area of the existing Airport entrance would encroach into the Part 77 airspace surfaces (e.g., 490 feet + 15 feet allowance = 505 feet AMSL, which is greater than the Part 77-compliant 490-foot maximum elevation).

**Alternative 8 – Displaced Entrance with Compact Flyovers**

This alternative builds on the previous design for the displaced entrance (see Alternative 6) with Airport-bound vehicles accessing the CTA via a two-lane flyover in each direction and exiting the Airport using a similar flyover, effectively eliminating two major left-turn movements. Differentiating from Alternative 6, this alternative uses the existing Airport access roadway, reducing construction costs and potential impacts to existing Airport facilities.

EXHIBIT 5-15 PRELIMINARY AIRPORT ENTRANCE



SOURCES: Nearmap, 2025 (aerial photography – for visual reference only, may not be to scale); Ricondo & Associates, Inc., April 2025.

**Exhibit 5-16** presents the qualitative criteria used to evaluate the eight preliminary alternatives. **Exhibit 5-17** summarizes the results of the alternatives screening evaluation, illustrating each alternative's rating to satisfy each criterion (from poor to excellent), and **Table 5-1** summarizes the results of the same evaluation using a numeric value for each criterion and weighting factor, which considers the different levels of priority for the DoA and stakeholders. The evaluation identified four alternatives that did not meet at least one criterion.

Alternative 3 (Direct Interchange with Tunnels) was eliminated due to the extremely high cost of tunneling and potential difficulty to phase construction without disrupting Airport entrance traffic. Alternative 4 (U-Turn at Airdrome Drive) was eliminated due to vehicle weaving issues caused by the proposed merging and weaving distance. Alternative 5 (Roundabout Entrance) was dismissed due to high volumes of left-turning traffic from the Airport exit, which would overwhelm the proposed layout. Finally, Alternative 6 (Displaced Entrance with Elevated Direct Ramps and Realigned Airport Access Road) was excluded primarily due to high construction costs and the potential confusion multiple access points could create for Airport users.

#### EXHIBIT 5-16 CRITERIA USED TO EVALUATE AIRPORT ENTRANCE IMPROVEMENT ALTERNATIVES

<b>Right-of-Way</b>	Assess availability of land to implement the design without affecting surrounding non-Airport areas.
<b>Potential Local Street Conflicts</b>	Assess potential of roadway changes and new connections introducing conflict points to the local street system.
<b>Constructability</b>	Assess whether the project can be constructed and phased to avoid disruption to both Airport and background traffic operations.
<b>Wayfinding</b>	Evaluate whether the design maintains traditional traffic patterns or introduces unfamiliar or potentially confusing routing. Additionally, evaluate decision distances and number of driver decisions at merging and diverging points.
<b>Conventional vs. Innovative Design</b>	Determine whether the alternative follows standard roadway design principles or introduces unconventional or innovative elements.
<b>Scalability</b>	Determine whether the design can accommodate future expansion (e.g., adding lanes) or has residual capacity beyond PAL 3 conditions.
<b>Traffic Operations and Safety</b>	Analyze operational conditions through different measures of effectiveness, such as queue lengths, average delay per vehicle, density, and LOS.
<b>Airspace Potential Conflicts</b>	Check for potential conflicts with RPZs and FAA height restrictions (e.g., Part 77).
<b>Favors Local/Background Traffic</b>	Determine whether the roadway concept benefits or favors local/non-Airport traffic.
<b>Favors Airport Traffic</b>	Evaluate whether the design prioritizes efficient Airport-bound traffic movement.
<b>Potential for Signature Entrance</b>	Identify whether the design is generic or has potential to serve as a signature Airport entrance feature.
<b>Planning-Level Construction Cost Estimate</b>	Categorize the estimated cost as low, moderate, or high.

NOTES:

FAA – Federal Aviation Administration

LOS – Level of Service

PAL – Planning Activity Level

RPZ – Runway Protection Zone

SOURCE: Ricondo & Associates, Inc., April 2025.

EXHIBIT 5-17 PRELIMINARY AIRPORT ENTRANCE ALTERNATIVES – SCREENING EVALUATION

Screening Criteria	Alternatives							
	1	2	3	4	5	6	7	8
Right-of-Way								
Potential Local Street Conflicts								
Constructability								
Wayfinding								
Conventional Design								
Scalability								
Traffic Operations and Safety								
Airspace Potential Conflicts								
Favors Local Traffic								
Favors Airport Traffic								
Potential Signature Entrance								
Construction Cost								
	<b>ALT L1</b>	<b>ALT L2</b>	<b>X</b>	<b>X</b>	<b>X</b>	<b>X</b>	<b>ALT L3</b>	<b>ALT L4</b>

LEGEND

- Excellent
- Very Good
- Good
- Fair
- Poor

SOURCE: Ricondo & Associates, Inc., April 2025.

TABLE 5-1 PRELIMINARY AIRPORT ENTRANCE ALTERNATIVES – NUMERIC EVALUATION

CRITERIA	CRITERIA WEIGHTING FACTOR	ALTERNATIVE 1	ALTERNATIVE 2	ALTERNATIVE 3	ALTERNATIVE 4	ALTERNATIVE 5	ALTERNATIVE 6	ALTERNATIVE 7	ALTERNATIVE 8
Right-of-Way	3	5	4	3	3	2	2	3	2
Potential Local Street Conflicts	2	3	5	2	3	5	2	3	4
Constructability	3	1	4	1	5	3	2	5	3
Wayfinding	1	5	4	5	4	4	5	4	5
Conventional Design	1	5	3	5	3	3	5	3	5
Scalability	2	4	4	3	2	2	5	2	5
Traffic Operations and Safety	3	4	5	5	2	1	4	3	4
Airspace Potential Conflicts	3	4	4	4	4	4	3	4	4
Favors Local Traffic	1	5	5	2	2	5	5	3	3
Favors Airport Traffic	1	4	5	5	3	1	4	4	5
Potential for Signature Entrance	1	2	4	1	2	5	4	2	3
Construction Cost	3	3	3	1	5	3	1	4	4
<b>Total (Weighted)</b>		<b>86</b>	<b>99</b>	<b>70</b>	<b>81</b>	<b>70</b>	<b>69</b>	<b>83</b>	<b>90</b>

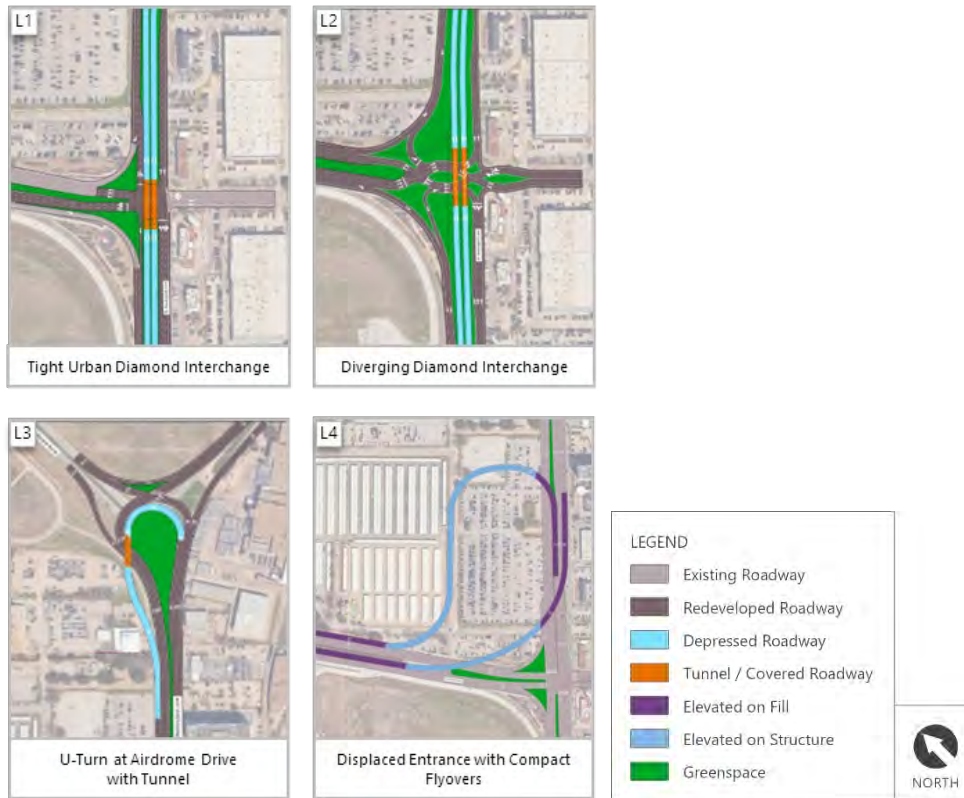
SOURCE: Ricondo &amp; Associates, Inc., April 2025.

### 5.3.3 SHORTLISTED AIRPORT ENTRANCE ALTERNATIVES

**Exhibit 5-18** depicts the shortlisted alternatives for the Airport entrance, named L1 through L4. The alternatives and respective elements are described as follows:

- **Alternative L1 – TUDI**
  - Conventional design
  - Favors Airport traffic
  - No impact on non-Airport areas
  - Complex constructability
  - Limited scalability
- **Alternative L2 – DDI**
  - Enhanced traffic flow
  - Shorter queue times
  - Potential for signature entrance
  - Potential high construction cost
  - Initial unfamiliar wayfinding
- **Alternative L3 – U-Turn at Airdrome Drive with Tunnel**
  - Medium implementation cost
  - U-turn radius below American Association of State Highway and Transportation Officials (AASHTO) minimum design speed of 20 miles per hour
- **Alternative L4 – DECF**
  - Exclusive access and egress for Airport traffic
  - High construction cost
  - Requires non-Airport property (Parking Spot 2)
  - Complex engineering demands

## EXHIBIT 5-18 SHORTLISTED AIRPORT ENTRANCE ALTERNATIVES



SOURCES: Nemap, 2025 (aerial photography – for visual reference only, may not be to scale); Ricondo & Associates, Inc., April 2025.

The four shortlisted alternatives were evaluated in more detail using quantitative criteria, including the following:

- Vissim traffic simulation modeling of each shortlisted alternative in PAL 3 peak hour conditions.
- Rough order of magnitude (ROM) construction cost estimates.
- Potential of shortlisted alternative to absorb additional demand beyond PAL 3.
- Constructability and preliminary construction phasing.
- Determination of potential land requirements off Airport property.

The detailed results of the evaluation are documented in Appendix I. **Exhibit 5-19** presents a high-level summary of the evaluation results. These evaluation results were categorized by four colors to describe whether the shortlisted alternative always meets or exceeds the criterion (green); mostly meets the criterion (yellow); most of the time does not meet the criterion (orange); or fails to meet the criterion (red).

EXHIBIT 5-19 SHORTLISTED AIRPORT ENTRANCE ALTERNATIVES EVALUATION AND IDENTIFICATION OF PREFERRED ALTERNATIVES

SHORTLISTED ALTERNATIVES		L1	L2	L3	L4
Measure		Tight Urban Diamond Interchange	Diverging Diamond Interchange	U-Turn at Airdrome Drive with Tunnel	Displaced Entrance with Compact Flyovers
Average Speed		Meets or Exceeds	Meets or Exceeds	Meets or Exceeds	Meets or Exceeds
Average Delay		Meets or Exceeds	Meets or Exceeds	Occasionally Meets	Meets or Exceeds
Arrivals Curb Travel Time (Roundtrip)		Meets or Exceeds	Meets or Exceeds	Fails to Meet	Meets or Exceeds
Departures Curb Travel Time (Roundtrip)		Meets or Exceeds	Meets or Exceeds	Fails to Meet	Meets or Exceeds
Intersection LOS and Delay (Overall; West Mockingbird Lane and Cedar Springs Road)		Meets or Exceeds	Meets or Exceeds	Occasionally Meets	Meets or Exceeds
Airport Entry/Exit Movement LOS and Delays		Meets or Exceeds	Meets or Exceeds	Occasionally Meets	Meets or Exceeds
ROM Construction Cost		Occasionally Meets	Meets or Exceeds	Meets or Exceeds	Occasionally Meets
Additional Capacity Beyond 2040		Meets or Exceeds	Meets or Exceeds	Occasionally Meets	Meets or Exceeds
Constructability		Fails to Meet	Occasionally Meets	Meets or Exceeds	Occasionally Meets
Potential Land Takings (Outside Airport Property)		Meets or Exceeds	Occasionally Meets	Occasionally Meets	Fails to Meet

<b>LEGEND</b>	Meets or Exceeds	Mostly Meets	Occasionally Meets	Fails to Meet	<b>L2</b>	<b>L4</b>
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NOTES

LOS – Level of Service

ROM – Rough Order of Magnitude

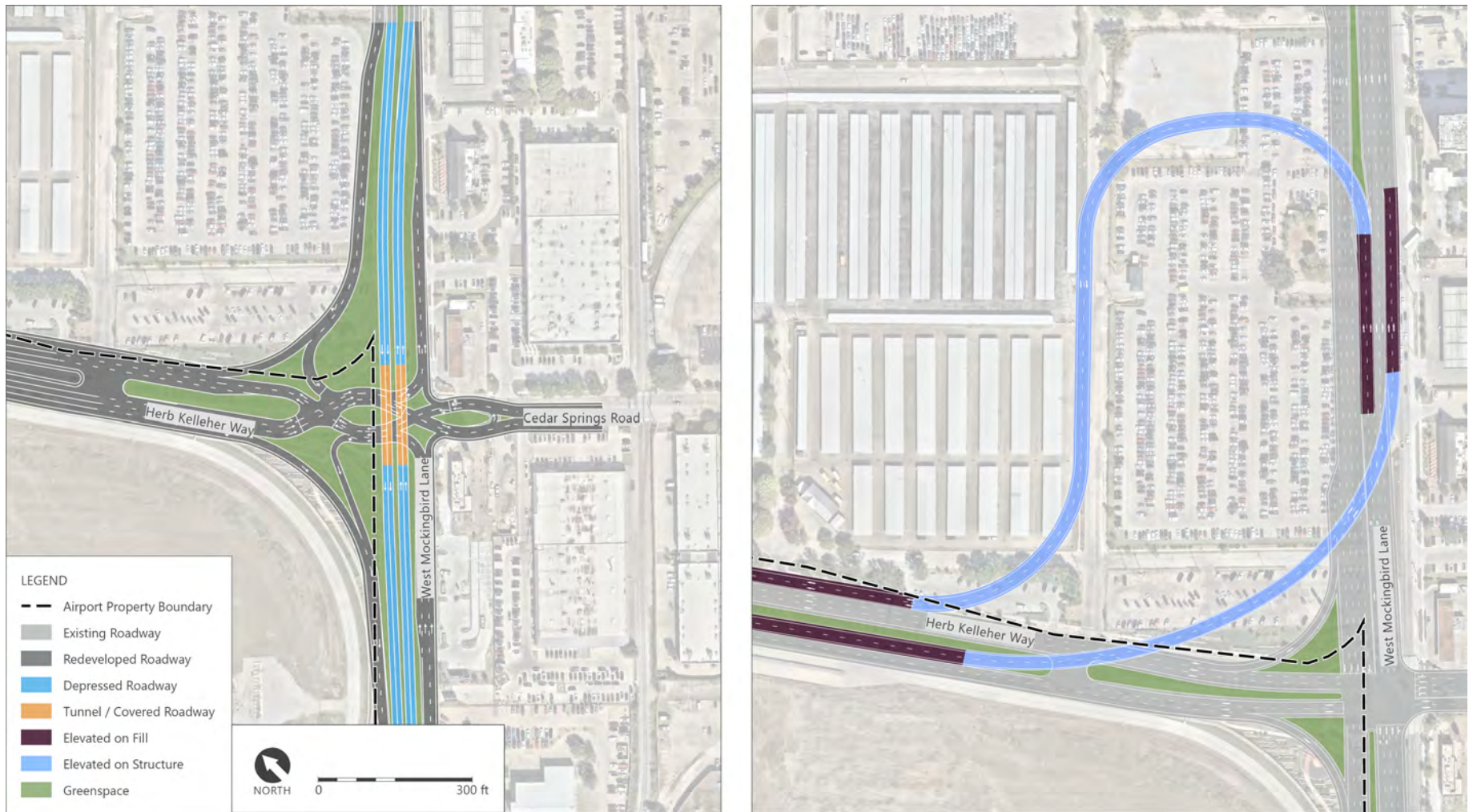
SOURCE: Ricondo & Associates, Inc., May 2025.

5.3.4 PRELIMINARY PREFERRED AIRPORT ENTRANCE ALTERNATIVES

Alternative L1 (TUDI) ranked the worst in terms of construction cost and would result in complex construction phasing to minimize disruptions to both Airport and background traffic operations. Alternative L3 (U-Turn with Tunnel) did not perform adequately in terms of traffic operations and offered limited residual capacity or scalability to accommodate demand beyond PAL 3.

Ultimately, Alternative L2 (DDI) and Alternative L4 (DECF) emerged as the preliminary preferred alternatives for refinement. **Exhibit 5-20** depicts Alternatives L2 and L4. To arrive at a single preferred alternative, additional stakeholder outreach was conducted with NCTCOG and TPW. The Airport entrance preferred alternative is described in Chapter 6.

EXHIBIT 5-20 PRELIMINARY PREFERRED AIRPORT ENTRANCE ALTERNATIVES



SOURCES: Nearmap, 2025 (aerial photography – for visual reference only, may not be to scale); Ricondo & Associates, Inc., April 2025.