

APPENDIX J EVALUATION OF ENTRANCE ALTERNATIVES EVALUATION

Exhibit J-1 through **Exhibit J-4** shows the Vissim speed maps for top four alternatives. The Alternative L1, Tight urban Diamond interchange (TUDI) performed well with an average speed of 19 mph and delay of 64 seconds. The roundtrip travel time to departures and arrivals curbside was within 10 minutes. The overall intersection Level of Service, Airport entry/exit LOS and worst turning LOS were all "C" and under which shows good performance of the intersection. The construction cost was at the higher end compared to other alternatives. The additional capacity that it would handle beyond year 2040 at 70% was one of the highlights of the alternative. Though constructability is considered complex, there would be no potential land takings outside of Airport property.

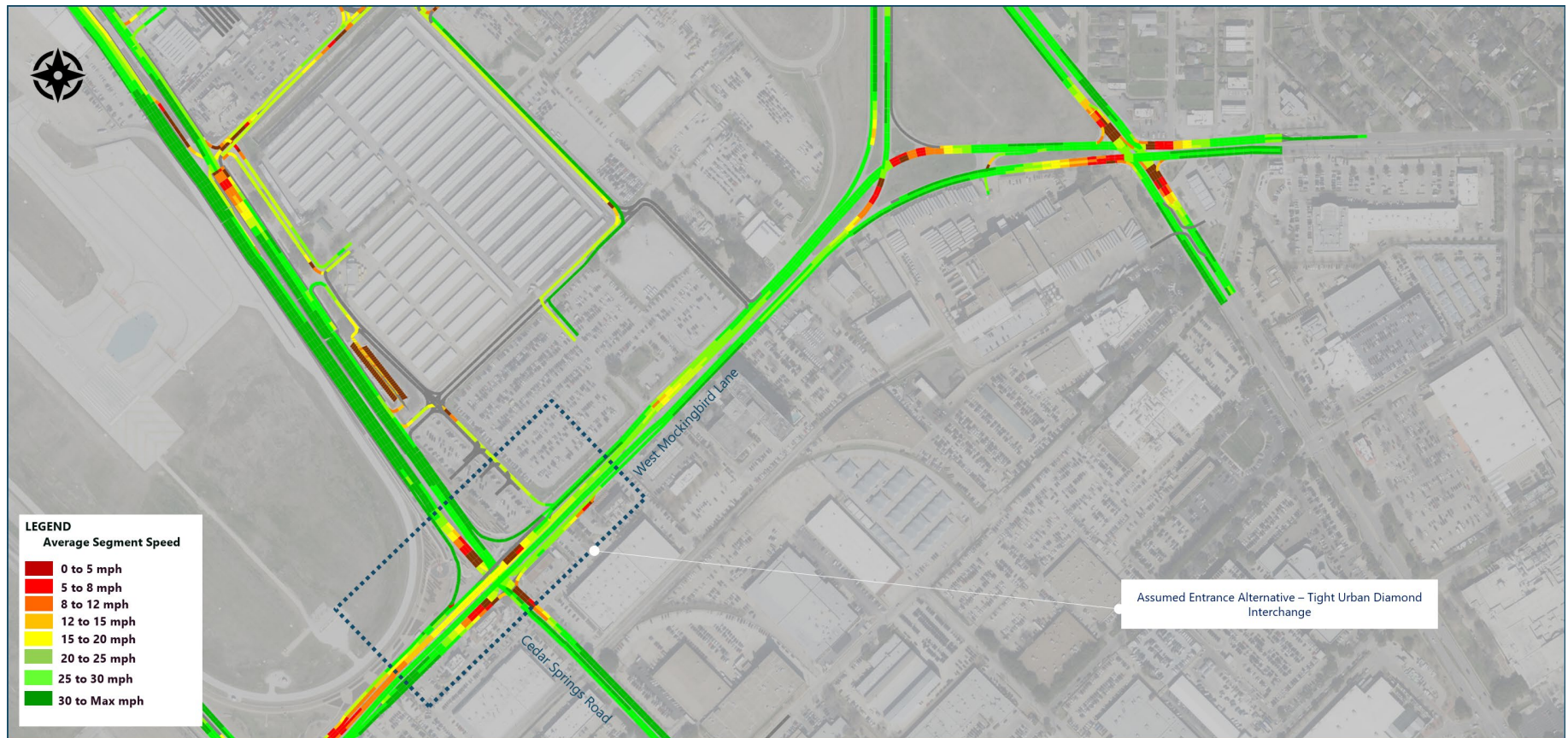
The Alternative L2, Diverging Diamond interchange also performed well with an average speed of 19 mph and delay of 57 seconds. The roundtrip travel time to departures and arrivals curbside was within 10 minutes. The overall intersection Level of Service, Airport entry/exit LOS and worst turning LOS were all "C" and under which shows good performance of the intersection as well. The construction cost was the second highest among all the alternatives. Similar to TUDI, the additional capacity that it would handle beyond year 2040 was at 70%. The constructability is considered complex, and there would be approximately 10,000 square feet of potential land takings outside of Airport property.

The Alternative L3, U-Turn at Airdrome Drive with Tunnel, performed okay with an average speed of 17 mph and delay of 80 seconds. The roundtrip travel time to arrivals curbside was around 13 minutes and to the departures curbside was within 10 minutes. The overall intersection Level of Service was B, Airport entry/exit could not be evaluated as the Airport traffic had to go through the signal. Worst turning LOS was at "D" which is considered okay considering overall performance of the signal. The construction cost was the lowest among all the alternatives. The additional capacity that it would handle beyond year 2040 was 30%. The constructability is feasible, and there would be approximately 3,750 square feet of potential land taking outside of Airport property.

The Alternative L4, Displaced Entrance with Compact Flyover, performed well with an average speed of 19 mph and delay of 64 seconds. The roundtrip travel time to departures and arrivals curbside was within 10 minutes. The overall intersection Level of Service was C, Airport entry/exit could not be evaluated as the Airport traffic had to go through the signal. Worst turning LOS was at "F" which is considered acceptable considering overall performance of the signal. The construction cost was the highest among all the alternatives. The additional capacity that it would handle beyond year 2040 was 70%. The constructability is considered complex, and there would be approximately 86,700 square feet of potential land takings outside of Airport property which is highest among all the four alternatives.

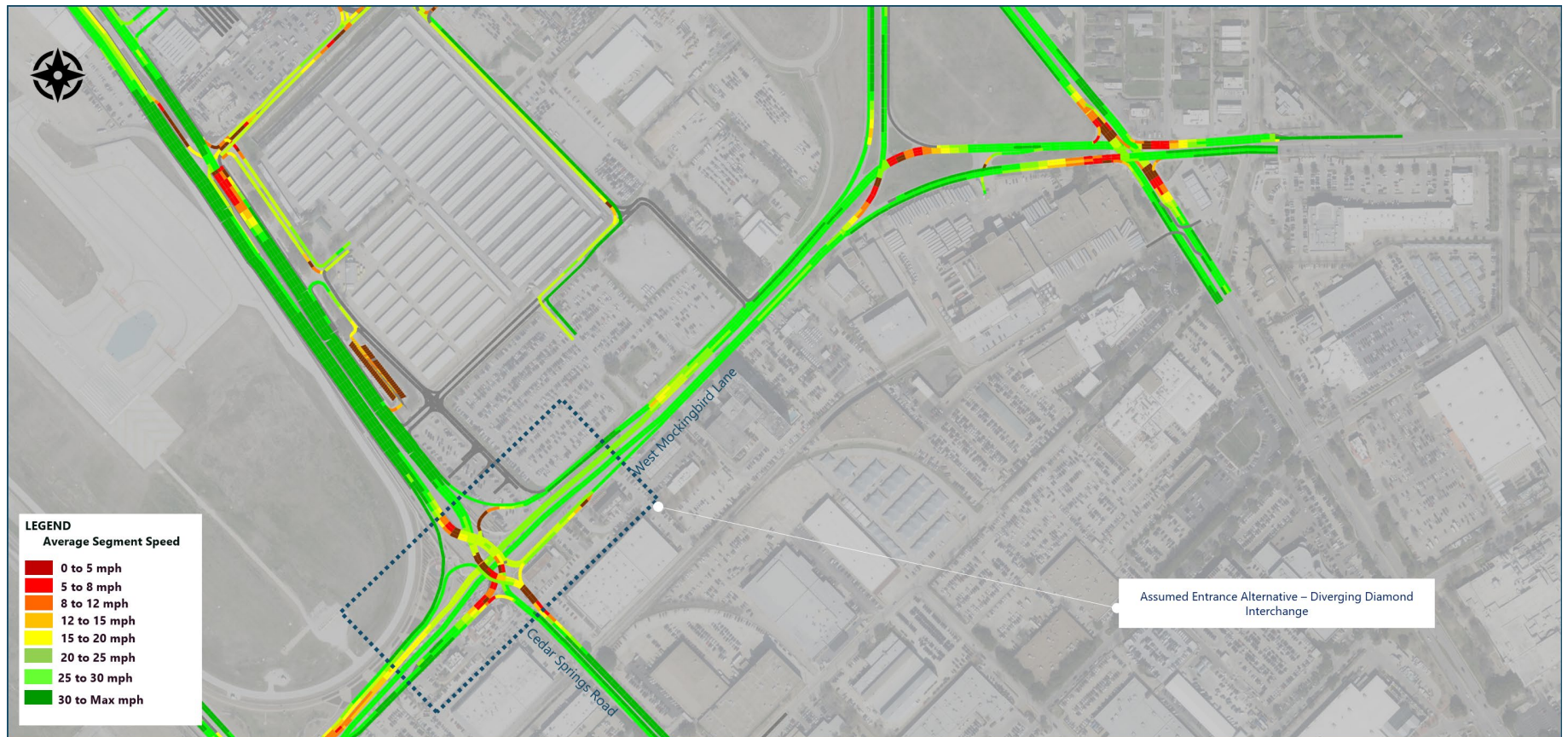
A brief description of evaluation matrix is presented in **Table J-1** and **Table J-2** shows the results for the four landside alternatives. Based on the matrix, the top four alternatives indicated that Diverging Diamond interchange as a preferred alternative and Displaced Entrance with Compact Flyovers a close second. Ultimately the Displaced Entrance with Compact Flyovers was chosen by the City of Dallas, Department of Aviation (DoA) as the only preferred option for the Master Plan.

EXHIBIT J-1 VISSIM SPEED MAP – TIGHT URBAN DIAMOND INTERCHANGE (L1)



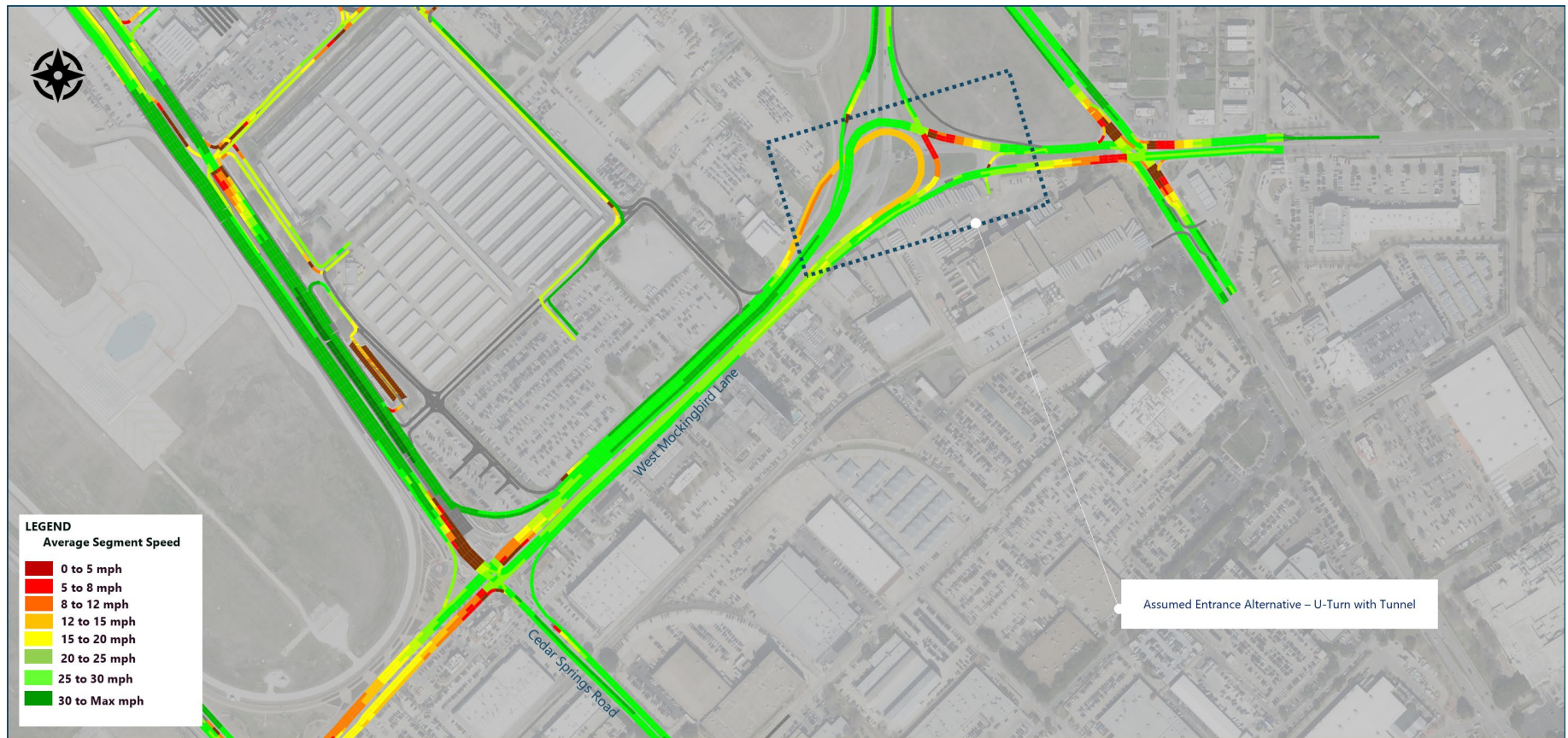
NOTE: mph – miles per hour
SOURCE: Ricondo and Associates Inc., May 2025.

EXHIBIT J-2 VISSIM SPEED MAP – DIVERGING DIAMOND INTERCHANGE (L2)



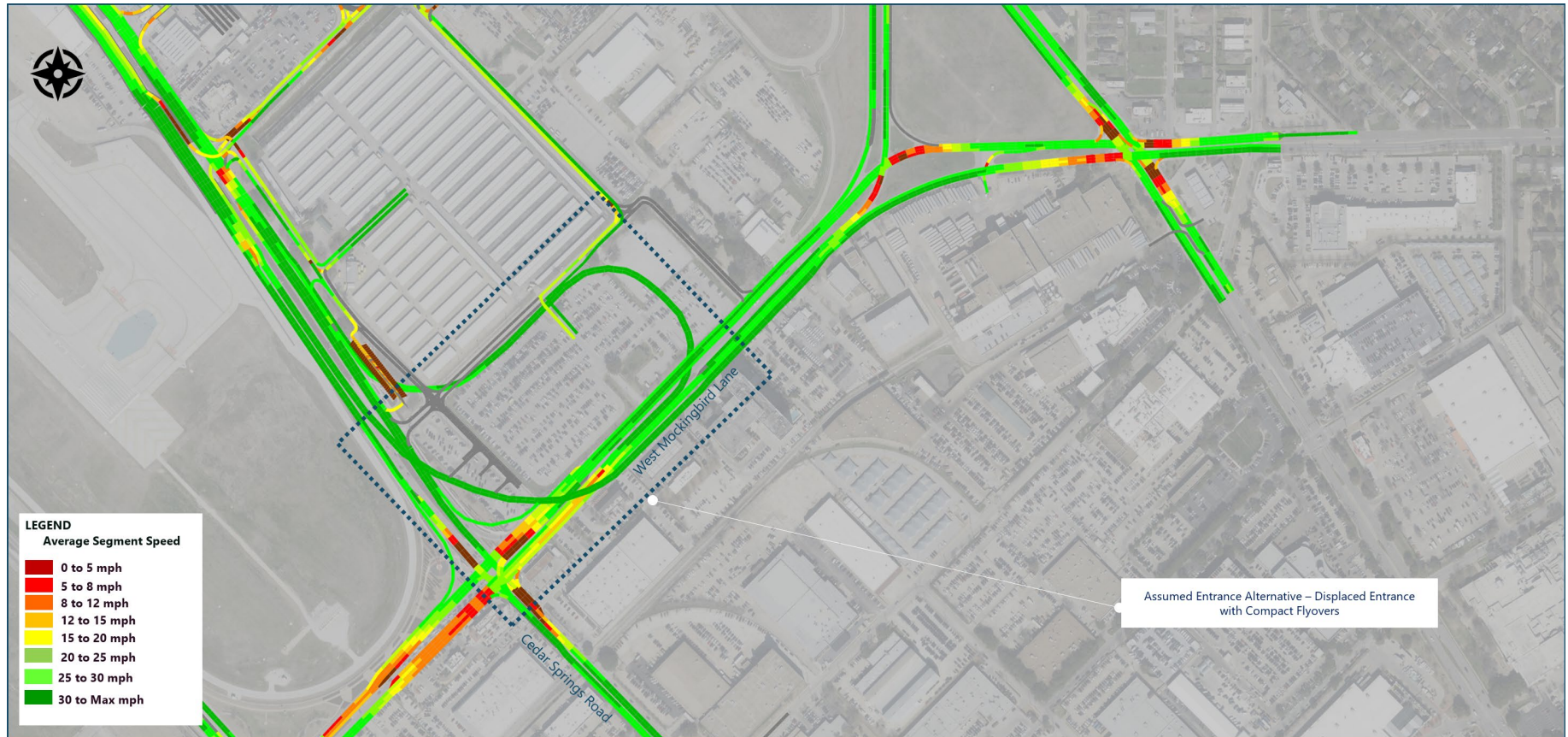
NOTE: mph – miles per hour
SOURCE: Ricondo and Associates Inc., May 2025.

EXHIBIT J-3 VISSIM SPEED MAP – U-TURN AT AIRDROME DRIVE WITH TUNNEL (L3)



NOTE: mph – miles per hour
SOURCE: Ricondo and Associates Inc., May 2025.

EXHIBIT J-4 VISSIM SPEED MAP – DISPLACED ENTRANCE WITH COMPACT FLYOVERS (L4)



NOTE: mph – miles per hour
SOURCE: Ricondo and Associates Inc., May 2025.

TABLE J-1 DESCRIPTION OF SHORTLISTED EVALUATION MATRIX

MEASURE/ALTERNATIVE	DESCRIPTION
Average Speed	Average speeds in the peak hours to determine when vehicles are experiencing significant slowdowns during the peak hours on circulation roadways, with 8 miles per hour being considered poor performance and shown in red on the speed maps
Average Delay	Average vehicle delays, targeting an average delay of less than two minutes per vehicle, not including any dwell times or intersection delays.
Arrivals Curbside Travel Time (Roundtrip)	Average travel time represents the time it takes for vehicles to complete a roundtrip from a defined starting point, travel through the arrivals curbside, and return to the same point.
Departures Curbside Travel Time (Roundtrip)	Average travel time represents the time it takes for vehicles to complete a roundtrip from a defined starting point, travel through the departures curbside, and return to the same point.
Intersection LOS and Delay (Overall) (Mockingbird Lane and Cedar Springs Road)	LOS is a measurement used by traffic engineers to analyze roadways and intersections by categorizing traffic flow and assigning quality levels of traffic according to the delay a driver experiences on the roadway attributed to the operation and sequencing of a signalized intersection. LOS criteria (measured by control delay per vehicle in seconds per vehicle) are the following: A < 10; B > 10–20; C > 20–35; D > 35–55; E > 55–80; and F > 80.
Airport Entry/Exit Movement LOS and Delays	Same criteria used for intersection LOS, but focuses on airport entry/exit movement
Worst turning movement LOS for intersection	Same criteria used for intersection LOS, but focuses on worst turning movement at the intersection
ROM Construction Cost (millions) – Preliminary Estimates	Preliminary construction cost in millions
Additional Capacity beyond 2040	This criterion evaluates the intersection as an independent element, assessing its Measures of Effectiveness (MOEs) based on its ability to accommodate traffic demand beyond the year 2040
Constructability	To check if the alternatives are feasible without disturbing the operation at Mockingbird Lane and Cedar Springs Road
Potential Land Takings (Outside of Airport Property) ¹	Additional land takings for the construction of alternatives that are not Airport property

NOTES:

LOS – Level of Service; ROM – Rough Order of Magnitude Estimate; mph – Miles Per Hour; sec – Seconds; sq ft – Square Feet

¹ Does not include City of Dallas right-of-way already dedicated to roadway facilities.

SOURCE: Ricondo and Associates Inc., May 2025.

TABLE J-2 SHORTLISTED ALTERNATIVES EVALUATION – MEASURES OF EFFECTIVENESS (MOES)

MEASURE/ALTERNATIVE	ALT L1 TIGHT URBAN DIAMOND INTERCHANGE	ALT L2 DIVERGING DIAMOND INTERCHANGE	ALT L3 U-TURN AT AIRDROME DRIVE WITH TUNNEL	ALT L4 DISPLACED ENTRANCE WITH COMPACT FLYOVERS
Average Speed	19 mph	19 mph	17 mph	19 mph
Average Delay	64 seconds	57 seconds	80 seconds	64 seconds
Arrivals Curbside Travel Time (Roundtrip)	9 min 56 sec	9 min 55 sec	12 min 2 sec	9 min 35 sec
Departures Curbside Travel Time (Roundtrip)	7 min 10 sec	7 min 12 sec	9 min 27 sec	7 min 45 sec
Intersection LOS and Delay (Overall) (Mockingbird Lane and Cedar Springs Road)	B (12 sec)	B (14 sec); B(10 sec)	B (16 sec)	C (29 sec)
Airport Entry/Exit Movement LOS and Delays	B (18 sec)	B (16 sec)	Airport traffic still must go through existing intersection	Free flow
Worst turning movement LOS for intersection	C	C	D	F
ROM Construction Cost (millions) – Preliminary Estimates	\$139.2	\$141.7	\$96.1	\$143.16
Additional Capacity beyond 2040	70%	70%	Less than 30%	70%
Constructability	Complex, Difficult to maintain operation on Mockingbird Ln	Complex but feasible	Feasible	Complex but feasible
Potential Land Takings (Outside of Airport Property) ¹	--	10,000 sq ft	3,750 sq ft	86,667.46 sq ft

NOTES:

LOS – Level of Service; ROM – Rough Order of Magnitude Estimate; mph – Miles Per Hour; sec – Seconds; sq ft – Square Feet

1 Does not include City of Dallas right-of-way already dedicated to roadway facilities.

Signalized Intersection Level of Service

LOS – Control Delay (seconds/vehicle)

A <10.0

B >10.0 and <20.0

C >20.0 and <35.0

D >35.0 and <55.0

E >55.0 and < 80.0

F >80.0

SOURCE: Ricondo and Associates Inc., May 2025.