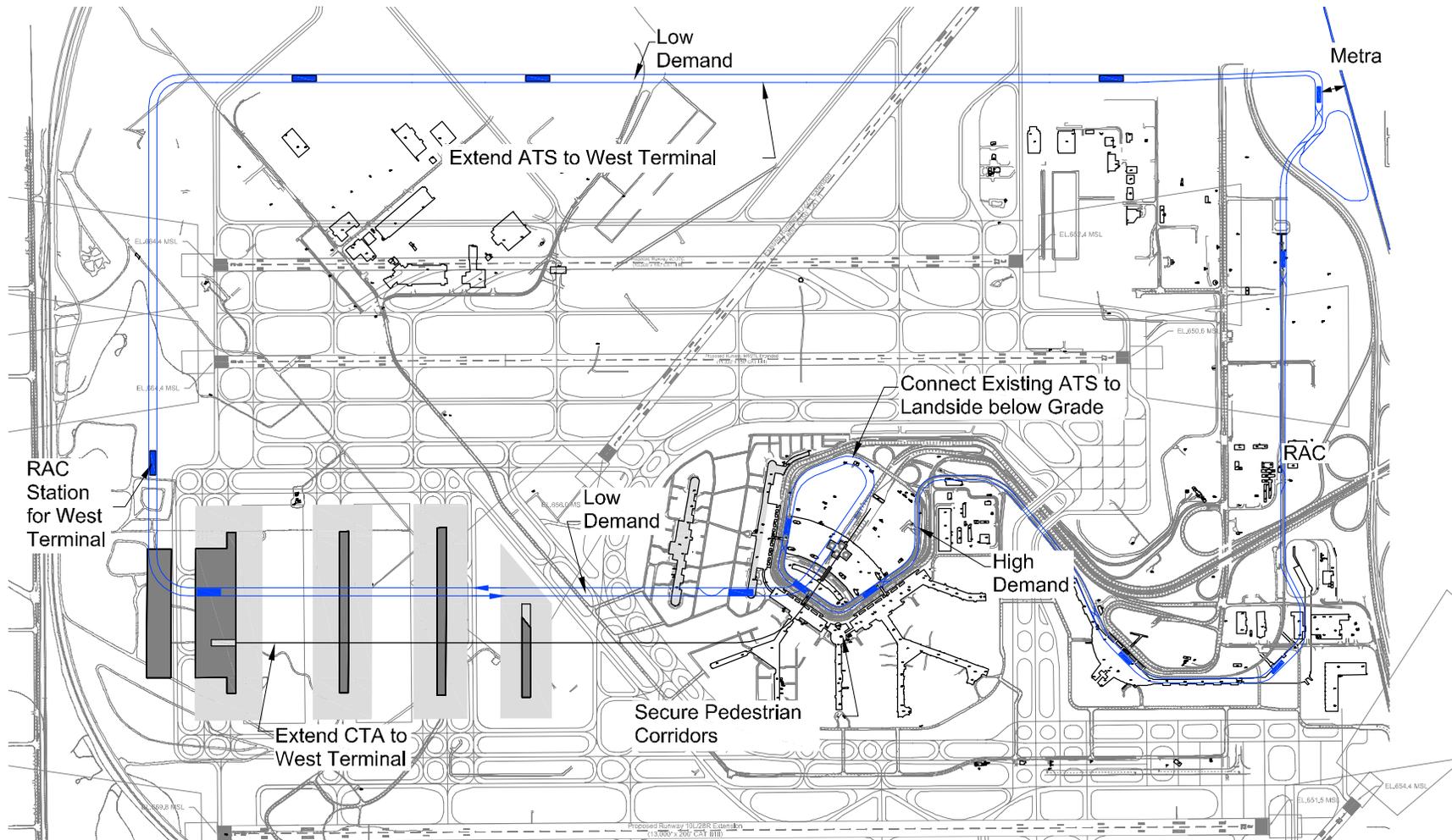


Source: Lea + Elliot, Inc.
Prepared by: Lea + Elliot, Inc.

Exhibit V-118



Non-Secure ATS Concept Alternative 2

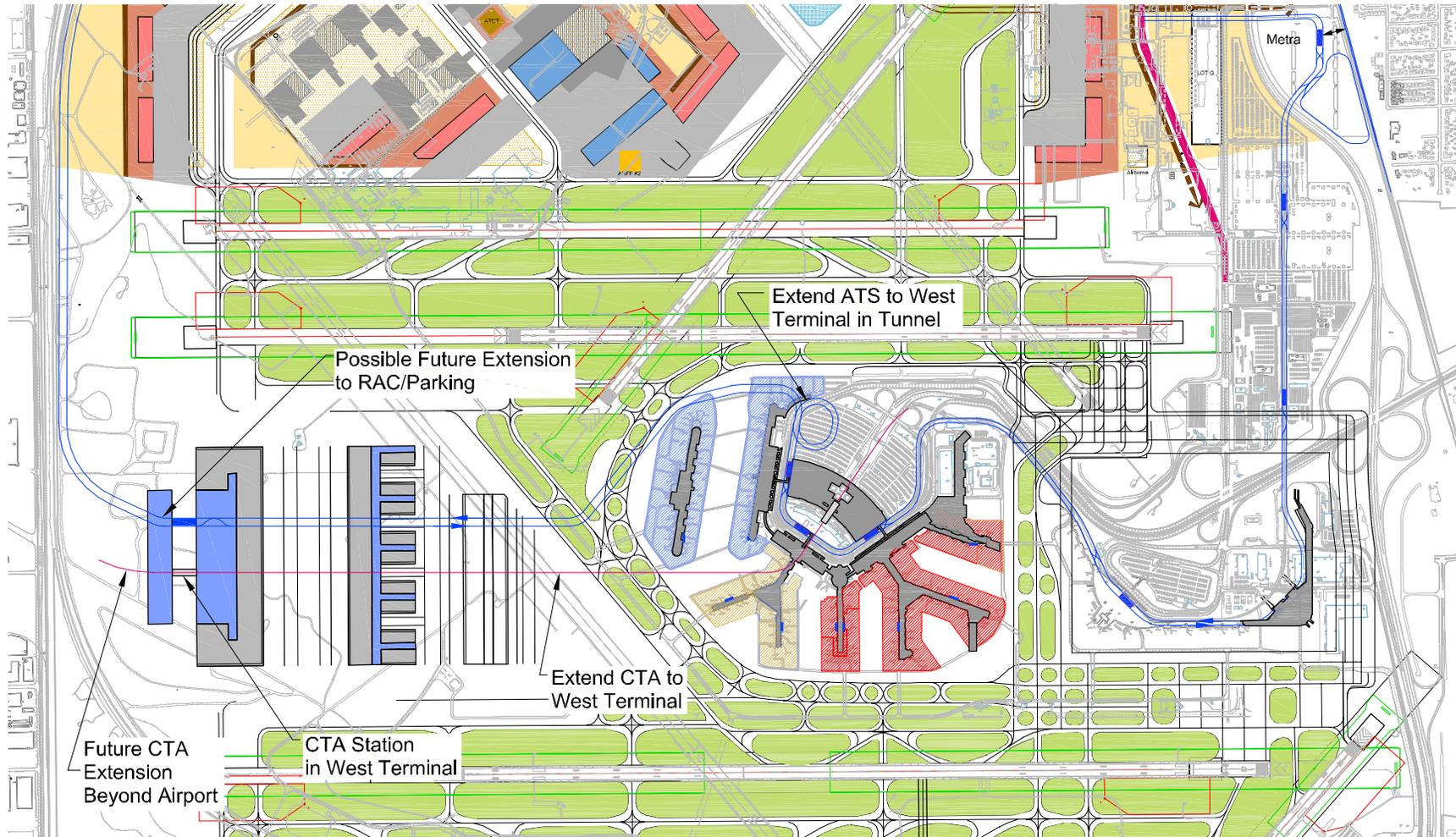


Source: Lea + Elliot, Inc.
Prepared by: Lea + Elliot, Inc.

Exhibit V-119



Non-Secure ATS Concept Alternative 3



Source: Lea + Elliot, Inc.
Prepared by: Lea + Elliot, Inc.

Exhibit V-120



Non-Secure ATS Concept Alternative 4

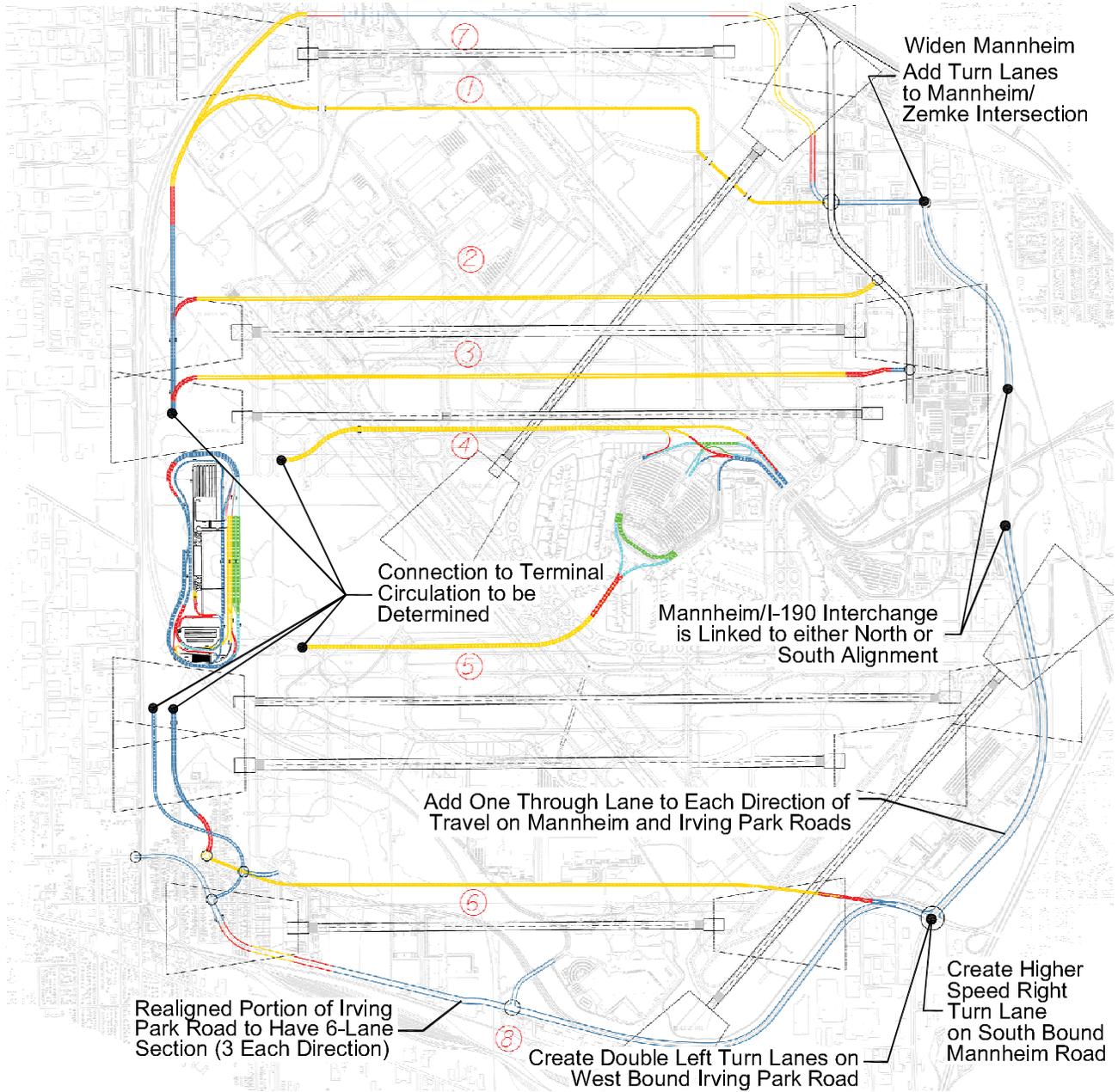
connection for traffic approaching from either direction to access either terminal area and to provide a direct roadway connection between the terminals.

Eight alternatives were developed to determine geometric layouts, traffic control requirements, and the location of tunnel sections, depressed roadway sections, and overpass structures. The alignments of the eight alternatives extend from the northern limits of the airfield to the southern limits, as depicted in **Exhibit V-121**.

- *Alternative 1* is located in the northern end of the airfield, approximately 1,050 feet south of future Runway 9L-27R. A signalized intersection is proposed to provide access at Bessie Coleman Drive. The roadway crosses several taxiways as well as existing Runway 4L-22R, which will remain in the same location. Approximately 15,000 linear feet of the alignment is a depressed roadway section. A major bridge structure for the existing Runway 4L-22R is required. On the western end, the roadway rises to surface level before crossing the RPZ for the proposed Runways 9C-27C and 9R-27L. Height restrictions throughout the RPZ are satisfied. In lieu of a signalized intersection at Bessie Coleman Drive, a full directional interchange was also considered to accommodate traffic at full build-out of the West Terminal.
- *Alternative 2* is located in the middle of the north airfield, approximately 640 feet north of future Runway 9C-27C. This more centralized location results in a shorter overall length than some of the other alternatives in the north or south airfield. However, this alternative impacts the preferred development concept for the Northwest Cargo Area, as this roadway alignment cuts through this area and would reduce the amount of land available for support/ancillary facilities. A signalized intersection was proposed to provide access at Bessie Coleman Drive. The roadway crosses several taxiways as well as Runway 4L-22R. Approximately 13,000 linear feet of the alignment is a depressed roadway section. A large bridge structure (approximately 250 feet wide) for Runway 4L-22R is required.¹² On the western end, the roadway rises to surface level before crossing the RPZ for the proposed Runways 9C-27C and 9R-27L. Height restrictions throughout the RPZ are satisfied. In lieu of a signalized intersection at Bessie Coleman Drive, a grade separated interchange was considered to accommodate traffic at full build-out of the West Terminal.
- *Alternative 3* is located in the middle of the north airfield between Runways 9C-27C and 9R-27L. The more centralized location results in a shorter overall length than most of the other alternatives. A signalized intersection is proposed to provide access at Bessie Coleman Drive. The roadway crosses several taxiways as well as Runway 4L-22R. Approximately 13,000 linear feet of the alignment is a depressed roadway section. A large bridge structure (approximately 250 feet wide) for Runway 4L-22R is also required.¹³ On the western end, the roadway rises to surface level before crossing the RPZ for Runways 9C-27C and 9R-27L. Height restrictions throughout the RPZ are satisfied. In lieu of a signalized intersection at Bessie Coleman Drive, a full directional interchange also was considered to accommodate traffic at full build out of the West Terminal Complex. Because of the lower required travel

¹² In accordance with Advisory Circular 150/5300-13, *Airport Design*, the bridge width must be the width of the runway plus the safety area, and thus should be a minimum of 500 feet. As these alternatives are presented only to demonstrate the variety of available alternatives, this analysis has not been modified for purposes of the Master Plan.

¹³ In accordance with Advisory Circular 150/5300-13, *Airport Design*, the bridge width must be the width of the runway plus the safety area, and thus should be a minimum of 500 feet. As these alternatives are presented only to demonstrate the variety of available alternatives, this analysis has not been modified for purposes of the Master Plan.



LEGEND

- Elevated Sections
- Elevated Transition Sections
- Surface Sections
- Below Grade Transition Sections
- Below Grade Sections

Source: Kimley-Horn and Associates, Inc.; Martinez Corp. Aerial Photography (Nov. 2001);
 Department of Aviation Airport Management and Records
 Prepared by: Kimley-Horn and Associates, Inc.

Exhibit V-121



Cross-Airfield Roadway Concepts

distances and times between the east and west sides of the Airport, Alternative 3 was considered to be the most likely of the cross-airfield roadway alternatives that might be developed in the future.

- *Alternative 4* is located in the middle of the airfield providing a short and direct connection. The taxiway crossings are almost continuous and the horizontal separation from the future Runway 9R-27L is the minimum allowable. Approximately 5,300 linear feet of the alignment is a depressed roadway section and 5,700 linear feet is a tunnel section. In addition, the connection to the existing roadway network on the east side is in the area of the existing terminal. As a result, modifications in this area resemble a grade separated interchange. This option would require a 600-foot northerly shift of existing Runway 9R-27L to accommodate the interchange with the existing Airport access road. Since this runway relocation is not part of the preferred airfield plan, this alternative was eliminated from further consideration.
- *Alternative 5* is located in the middle of the airfield with a connection through the existing Terminal Core Area. It significantly alters the existing circulation of the Terminal Core Area and is dependent on the reconstruction of the existing terminal curbside roadways and much of Terminal 2. A completely new and expanded terminal curbside roadway system would be needed.
- *Alternative 6* is located in the southern end of the airfield, approximately 800 feet north of future Runway 10R-28L. The roadway crosses several taxiways as well as existing Runway 4R-22L, which will remain in the same location in the future. Approximately 12,000 linear feet of the alignment is a depressed roadway section. A large bridge structure (approximately 250 feet wide) for Runway 4R-22L is required. On the western end, the roadway rises to surface level before crossing the RPZ for proposed Runways 10C-28C and 10L-28R. Height restrictions throughout the RPZ are satisfied. A signalized intersection is proposed to provide access to Irving Park Road.
- *Alternative 7* is located in the northern extremity of the airfield, approximately 750 feet north of future Runway 9L-27R. A signalized intersection would provide access at Bessie Coleman Drive. This location avoids taxiway crossings and, therefore, allows most of the roadway to remain at surface level. However, it is approximately 10,000 feet longer on average than the other alternatives and much less direct. Additionally, a depressed section is required, as the alternative crosses the RPZ for future Runway 9L-27R and existing Runway 4L-22R.
- *Alternative 8* is located in the far southern area of the airfield, along the alignment of relocated Irving Park Road. This alternative consists of a surface-level roadway section, which requires widening of existing arterial roadways.

These eight alternatives were developed and evaluated based on surface roadway length, depressed roadway length, tunnel sections, structures, and traffic signals. As shown in **Table V-21**, each alternative offers distinct differences relating to specific costs that were evaluated. Variations and refinements to each of these alternatives were discussed.

Table V-21

Cross-Airfield Roadway Concepts – Planning Level Costs for Comparative Purposes

Roadway Concept	Total Length (lf)	Roadway (Surface)			Depressed Roadway Section			Tunnel Section			Overpass Structure			Traffic Signals			Raw Cost (\$000)	With Contingencies 40% (Design 10%, Insp 10%, Const 20%) (\$000)
		Length (lf)	Unit Cost (\$000/lf)	Cost (\$000)	Length (lf)	Unit Cost (\$000/lf)	Cost (\$000)	Length (lf)	Unit Cost (\$000/lf)	Cost (\$000)	Area (sf)	Unit Cost (\$)	Cost (\$000)	# of Signals	Unit Cost (\$000)	Cost (\$000)		
CONNECTOR #1	20,000																	
New 4-lane airfield connector		5,000	\$2.6	\$13,000	15,000	\$6.0	\$90,000.0	-	\$33.0	-	50,500	\$150	\$7,575.0	1	\$150.0	\$150.0		
Total				\$13,000			\$90,000.0						\$7,575.0			\$150.0	\$110,725.0	\$155,015.0
CONNECTOR #2	16,500																	
New 4-lane airfield connector		3,500	\$2.6	\$9,100	13,000	\$6.0	\$78,000.0	-	\$33.0	-	80,000	\$150	\$12,000.0	1	\$150.0	\$150.0		
Total				\$9,100			\$78,000.0						\$12,000.0			\$150.0	\$99,250.0	\$138,950.0
CONNECTOR #3	34,200																	
New 4-lane airfield connector with Interchange at Bessie Coleman		6,000	\$2.6	\$15,600	15,200	\$6.0	\$91,200.0	-	\$33.0	-	180,000	\$150	\$27,000.0	-	\$150.0	-		
Interchange Ramps and Bessie Coleman widening		13,000	\$1.4	\$18,200		\$3.9	-	-	\$23.0	-	-	\$150	-	-	\$150.0	-		
Total				\$33,800			\$91,200.0						\$27,000.0			-	\$152,000.0	\$212,800.0
CONNECTOR #4	11,500																	
New 4-lane airfield connector		500	\$2.6	\$1,300	5,300	\$6.0	\$31,800.0	5,700	\$33.0	\$188,100.0	53,000	\$150	\$7,950.0	-	\$150.0	-		
Total				\$1,300.0			\$31,800.0			\$188,100.0			\$7,950.0			-	\$229,150.0	\$320,810.0
CONNECTOR #5	10,000																	
New 4-lane airfield connector		3,000	\$2.6	\$7,800	-	\$6.0	-	7,000	\$33.0	\$231,000.0	-	\$150	-	-	\$150.0	-		
Total				\$7,800			-			\$231,000.0			-			-	\$238,800.0	\$334,320.0
CONNECTOR #6	17,500																	
New 4-lane airfield connector		5,200	\$2.6	\$13,520	12,300	\$6.0	\$73,800.0	-	\$33.0	-	71,000	\$150	\$10,650.0	1	\$150.0	\$150.0		
Total				\$13,520			\$73,800.0			-			\$10,650.0			\$150.0	\$98,120.0	\$137,368.0
CONNECTOR #7	23,050																	
New 4-lane airfield connector		12,750	\$2.6	\$33,150	10,300	\$6.0	\$61,800.0	-	\$33.0	-	-	\$150	-	1	\$150.0	\$150.0		
New 4-lane arterial		1,450	\$3.5	\$5,075	-	\$7.8	-	-	\$42.0	-	-	-	-	1	\$150.0	\$150.0		
New 6-lane interstate		-	\$4.6	-	-	\$10.2	-	-	\$55.8	-	-	-	-	-	\$150.0	-		
Add 2-lanes to existing interstate		4,000	\$2.0	\$8,000	-	\$5.5	-	-	\$32.0	-	-	-	-	-	\$150.0	-		
Add 2-lanes to existing arterial		-	\$1.8	-	-	\$5.2	-	-	\$30.0	-	-	-	-	-	\$150.0	-		
Total				\$46,225			\$61,800.0			-			-			\$300.0	\$108,325.0	\$151,655.0
CONNECTOR #8	5,600																	
New 4-lane airfield connector		5,300	\$2.6	\$13,780	2,500	\$6.0	\$15,000.0	-	\$33.0	-	-	\$150	-	1	\$150.0	\$150.0		
New 4-lane arterial		8,600	\$3.5	\$30,100	-	\$7.8	-	-	\$42.9	-	-	-	-	3	\$150.0	\$450.0		
New 6-lane interstate		-	\$4.6	-	-	\$10.2	-	-	\$55.8	-	-	-	-	-	\$150.0	-		
Add 2-lanes to existing interstate		8,200	\$2.0	\$16,400	-	\$5.5	-	-	\$32.0	-	-	-	-	-	\$150.0	-		
Add 2-lanes to existing arterial		7,800	\$1.8	\$14,040	-	\$5.2	-	-	\$30.0	-	-	-	-	1	\$150.0	\$150.0		
Total				\$74,320.0			\$15,000.0			-			-			\$750.0	\$90,070.0	\$126,098.0

Notes:
 Connector #4 does not include cost for Construction of connection to East Terminal roadways.
 Connector #5 does not include cost for reconstruction of Terminal 2

Source: Ricondo & Associates, Inc.
 Prepared by: Ricondo & Associates, Inc.

5.5.2.3 Shuttle Bus System Concept

For cost reasons, the preferred concept for transporting non-secure passengers between the Terminal Core Area, the East Terminal Area, and the West Terminal Complex is a shuttle bus operating on public roadways around the Airport. The shuttle bus will carry passengers, visitors, and employees who will not be able to pass through security to use the secure APM system.

The routing of this shuttle from the West Terminal Complex would go south on York Road, east on Irving Park Road, then north on Mannheim Road to the Terminal Core and East Terminal Areas. This route is depicted on **Exhibit V-122**. It is noted that the primary purpose of this shuttle bus operation is to serve the few displaced passengers (i.e., those who find themselves on the wrong side of the Airport and cannot pass through security to reach the other side); therefore, the shuttle bus operates only between terminals and is not intended to serve long-term parking lots. Therefore, a passenger with checked baggage who deplanes at the east side of the Airport, leaves the secure area to claim baggage, and then must reach a car parked in the west side long-term lot will take two shuttle buses: one from the east side to the West Terminal Complex and a second shuttle bus from the West Terminal Complex to the west side long-term parking lot. Similarly, a passenger making the reverse trip (west side to east side long-term parking) will take the shuttle bus from the west to east side and then access the ATS from one of the east side terminals to the long-term parking lot.

The specific demand for the cross-Airport movement has not been modeled. Demand was estimated at a gross level with the understanding that the number of shuttle buses used in the service could vary up or down depending on the ultimate need of the system. However, the shuttle bus system is a flexible alternative in that the number of vehicles in service and the size of the vehicles can be adjusted to meet demand.

In order to establish some evaluation parameters for evaluating the system and for modeling the future condition of the off-Airport transportation system, it was assumed that the shuttle bus system would operate on 10-minute headways (i.e., a shuttle vehicle serving a stop every 10 minutes) and that the average demand per vehicle would be 15 persons. However, full-size transit buses were assumed in this service to account for peaks in demand and for establishing potential costs for providing the service.

The system is assumed to operate from 5:00 a.m. until midnight. The total round trip time for a vehicle was assumed to take an average of 60 minutes accounting for all stops at each of the terminals. Based on these system attributes, the costs to implement the shuttle bus on local roadways concept would be approximately \$4 million (assumes the purchase of eight buses, of which two are spares, at a cost of \$500,000 per vehicle). One advantage of the shuttle bus alternative is that costs of providing the busses to support the system can be either a capital or an operating cost, depending on how the Airport sponsor wishes to proceed.

The overriding factor in determining the preferred concept for the east/west movement of non-secure passengers was cost.



Source: Ricondo & Associates, Inc.; Air Photo USA (2000)
Prepared by: Ricondo & Associates, Inc.

Exhibit V-122



Non-Secure Passenger Movements Shuttle Bus Concept Route