

## 5.2 Terminal Facilities Alternatives Analysis

The analysis of terminal facility requirements in Section IV indicates that a total apron frontage of 37,000 to 40,000 linear feet would be required to meet the 2018 aircraft activity requirements. The alternatives presented in this section explore a range of options to expand terminal facilities within the existing terminal areas combined with concepts for terminal development that can be accommodated within available space consistent with the preferred airfield plan. Based on the preferred airfield concept, three major areas were identified for future terminal development. These three terminal development areas are shown in **Exhibit V-23** and are described as follows:

- *Terminal Core Area* includes existing domestic Terminals 1, 2, and 3 and the terminal area support facilities including the EPS, O'Hare Hilton Hotel, and the H&R Complex.
- *East Terminal Area* currently includes existing International Terminal 5.
- *West Terminal Area* is on the west side of the Airport located between existing Runway 9R-27L on the north, proposed Runway 10L-28R on the south, existing Runway 14R-32L on the east, and York Road and the Canadian Pacific Railroad on the west.

The ultimate configuration of terminal facilities developed at the Airport is influenced by the aircraft sizes and passenger characteristics of the airlines anticipated to be using the facilities. The alternatives presented have taken into account the need to provide the flexibility to accommodate potential future changes in the type and size of aircraft used. The range of alternatives developed also recognizes the continued requirement to accommodate both international and domestic activity and a significant level of passenger connections.

### 5.2.1 Verification of Gate Requirements

As part of the simulation analysis presented in Section 5.1.3, the assignment of departing and arriving aircraft to specific terminal gates was modeled. The design day schedules were gated based on future terminal availability assumptions and representative airline activity volumes. To allow the gates to be distributed to accommodate development of growth strategies for the various airline groups at the Airport, aircraft operations were segregated into four representative categories. The first two categories assume that hubbing carriers of similar operational characteristics to American Airlines and United Airlines would operate at the Airport in the future. The categories are as follows:

- *Hub Carrier 1* represents a carrier similar to American Airlines, its Regional Domestic Partners (including American Eagle), and its **oneworld** Alliance Partners.
- *Hub Carrier 2* represents a carrier similar to United Airlines, its Regional Domestic Partners (including United Express carriers), and its Star Alliance Partners.
- *Other Domestic Carriers* includes other incumbents and potential new entrants.
- *Other International Carriers* includes other incumbents and potential new entrants.

Each of these airline groupings was assigned to specific terminals at the Airport. Once assigned to the specific terminals, gates within the assigned terminals were allocated for flights operated by the designated airline groupings on a preferential-use basis. In determining the ultimate terminal requirements for 2018, it was assumed that all the gates in the Terminal Core Area for existing

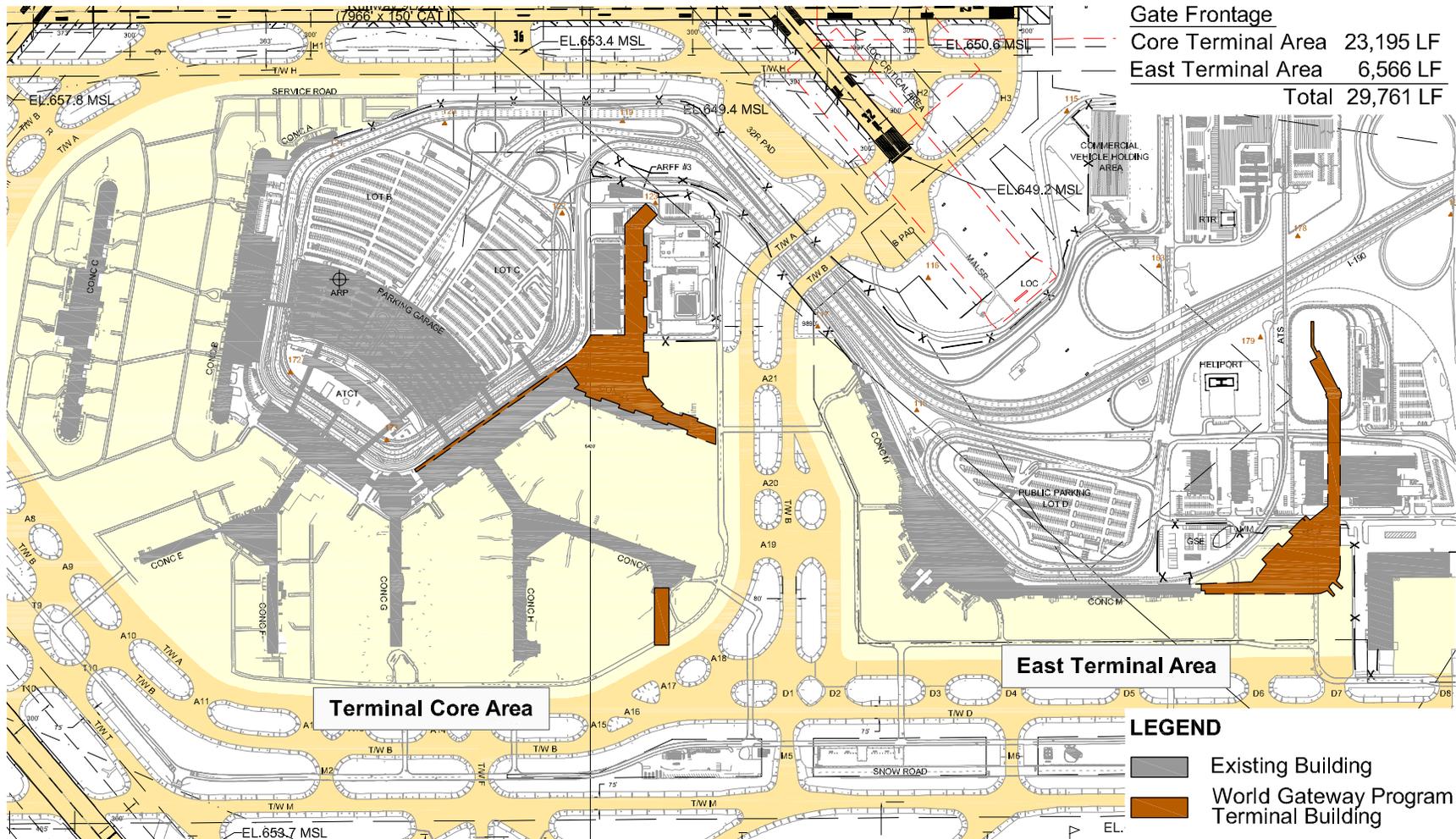


Terminals 1, 2, and 3 are available, as well as gates at Terminal 4, including the reconfiguration of Concourse L and the extension to Concourse K as included in the WGP. For the East Terminal Area, it was assumed that all the existing Terminal 5 gates are available (less the gates that will be removed to accommodate the extension of Concourse M to the east for the development of Terminal 6), and Terminal 6 as envisioned under the WGP. To accommodate the total ultimate gate component, the gate assignment model assumed there would be a new West Terminal Complex. To accommodate international arrivals, the existing FIS facility in Terminal 5 will be supplemented with new FIS facilities in both Terminal 4 and in the West Terminal.

The WGP included a reconfiguration of Terminal 2 to accommodate wide-body aircraft gates at the terminal connected to new FIS facilities for international arrivals. The gate model for 2018 was able to allocate all international aircraft operations to gates at Terminals 4 and 6 as well as the West Terminal. Therefore, the concourse and FIS improvements described under the WGP for Terminal 2 are excluded from the alternatives. However, future redevelopment of Terminal 2 would not be precluded by the terminal concepts.

**Exhibit V-24** shows the existing and proposed new terminal facilities as proposed under the WGP that have been retained in the analysis of the terminal concepts. **Table V-8** summarizes the apron capability in terms of linear frontage for the existing terminal facilities and compares it to the additional frontage that will be provided through the WGP proposed projects. Gate frontage of the existing terminal facilities is approximately 25,530 linear feet. With the incorporation of the proposed WGP projects (without the Terminal 2 modifications), the linear frontage capability would increase to a total of approximately 29,760 linear feet Airport-wide.

**Table V-9** presents the results of the gate assignment modeling of the 2018 peak period. Appendix C presents the ramp charts associated with this analysis. The results were generated in terms of numbers of aircraft by aircraft type for the four groups of airlines operating at O'Hare. The corresponding apron frontage required in the peak period to accommodate each group of carriers is also presented. The minimum overall apron requirement is shown as 232 aircraft on the ground requiring 38,070 linear feet of apron frontage. The apron requirement indicated by the gate assignment model is less than the 265 gates and 39,500 linear feet initially calculated in Section 4.2.1. The reason is that the average gate width indicated by the model is 164 feet, which is 9 percent wider than the Narrow Body Equivalent Gate width of 150 feet used in the preliminary planning calculations. The wider gate reflects the anticipated increase in use of larger aircraft and a higher rate of utilization of each gate for aircraft operations as the demand for gate facilities continues to grow over the planning period.



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

Note:  
 Proposed WGP improvements to  
 Terminal 2 are not included

Exhibit V-24



## Existing Terminal Facilities with World Gateway Program

**Table V-8**

Existing Aircraft Gate Frontage Compared to Additional Gate Frontage with the WGP

	Existing Frontage (linear feet)	Frontage with WGP (linear feet)
Terminal Core Area		
Terminal 1		
Concourse B	2,969	2,969
Concourse C	4,290	4,290
Subtotal	7,259	7,259
Terminal 2		
Concourse E	2,362	2,362
Concourse F	2,074	2,074
Subtotal	4,436	4,436
Terminal 3 <sup>1/</sup>		
Concourse G	2,237	2,294
Concourses H and K	5,636	6,306
Concourse L	1,991	-
Subtotal	9,864	8,600
Terminal 4 <sup>2/</sup>	-	2,900
Terminal Core Area Subtotal	21,559	23,195
East Terminal Area		
Terminal 5 <sup>3/</sup>	3,970	3,748
Terminal 6 <sup>4/</sup>	-	2,818
East Terminal Area Subtotal	3,970	6,566
Total All Terminals	25,529	29,761

1/ Frontage with WGP for Terminal 3 reflects the extension of Concourse K and removal of existing Concourse L.

2/ Frontage with WGP for Terminal 4 reflects retention of the west portion of existing Concourse L.

3/ Frontage with WGP for Terminal 5 reflects a total of 17 international gates including the removal of four gates at the east end of existing Concourse M to accommodate the connection to Terminal 6.

4/ Total frontage with WGP for Terminal 6 reflects the split between international and domestic based on five B-747-400 international gates and the remaining frontage supporting 11 domestic gates.

Source: Ricondo & Associates, Inc.; *Final Environmental Assessment, Chicago O'Hare International Airport, World Gateway Program and Other Capital Improvements*, Table 2-5: "Summary of Gate Requirements," February 8, 2003.

Prepared by: Ricondo & Associates, Inc.