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O'Hare Modernization Program
February 2003

Unconstrained Demand Analysis

Submitted to FAA for Review and Comment

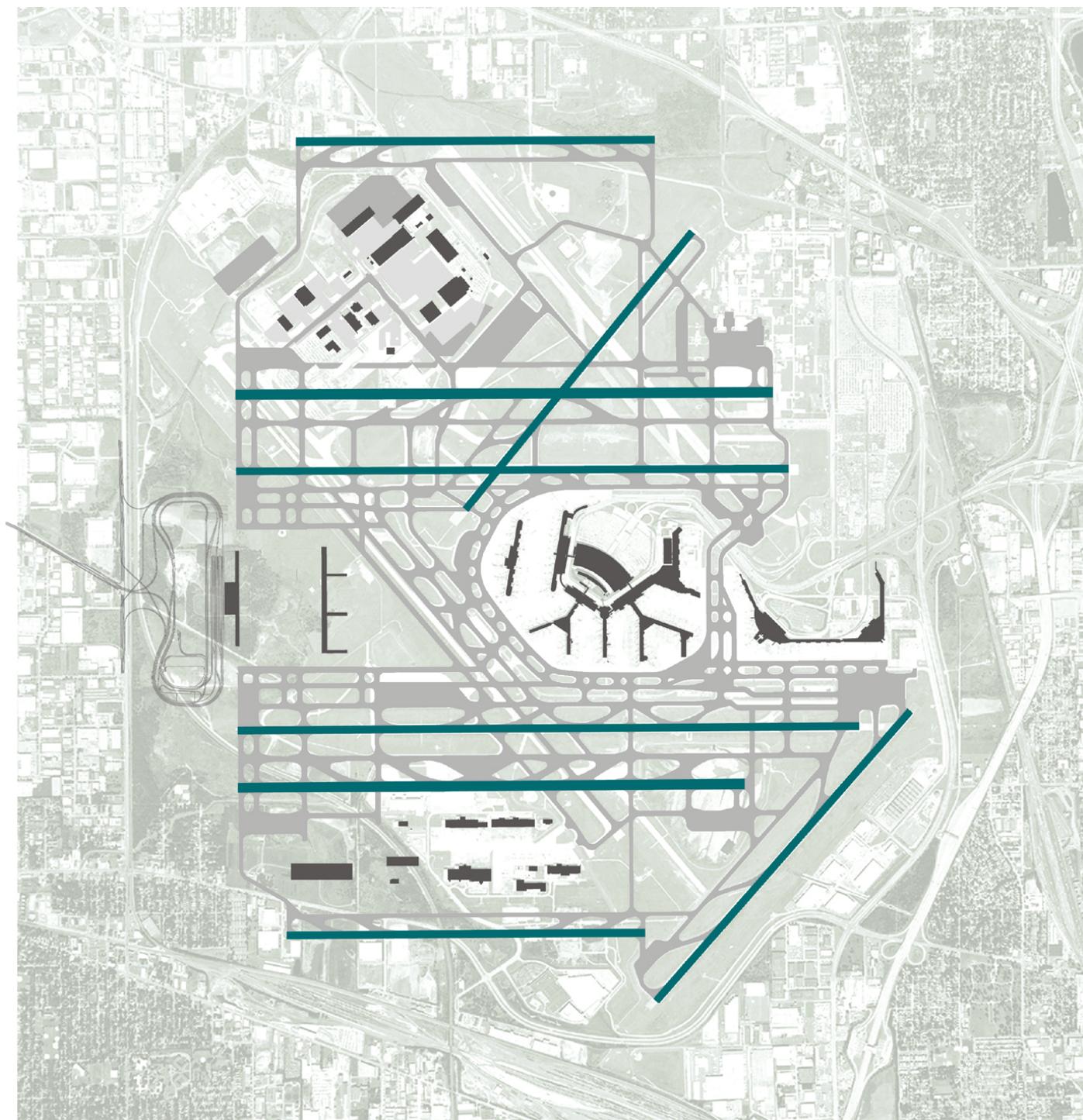


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I. Introduction

Over the past year, the City of Chicago (referred to herein as “the City”) has undertaken various planning analyses for the O’Hare Modernization Program (OMP). One of the first tasks performed as part of OMP planning analyses was the aviation demand analysis. Since the aviation demand analysis was initiated in early 2002, historical activity through 2001 was used to assess operating characteristics at Chicago’s O’Hare International Airport (referred to herein as “ORD” or the “Airport”) and to derive future airport activity profiles. Future activity projections were established for the twenty-year horizon starting in 2002 and ending in 2022. However, activity patterns throughout 2002 were monitored in order to identify changes in operating patterns at the Airport and to assess activity volumes at ORD following the September 11, 2001 terrorist attacks and the slowdown in the U.S. economy that began during the first quarter of 2001.

The aviation demand analysis for the OMP comprised the utilization of previously developed forecasts to establish derivative aviation activity profiles and future design day schedules for the Airport. These activity profiles and design day schedules have since been used in simulation analyses and to establish future facility requirements for ORD. The OMP demand analysis will also support the ongoing environmental studies associated with the OMP.

The remainder of this document provides a brief overview of the Airport’s current role, operating characteristics, historical traffic levels, and air service patterns. Following this discussion, the adopted forecast sources are presented as well as the assumptions and methodologies used to develop the derivative activity forecasts and future design day schedules. Based on this general outline, the following sections are presented in the remainder of this document:

- Section II - Airport Overview
- Section III - Historical Airport Activity
- Section IV - Airline Activity (Pre- and Post-September 11, 2001)
- Section V - Demand Analysis Overview
- Section VI - Derivative Demand Profiles – Passenger Enplanements
- Section VII - Derivative Demand Profiles – Aircraft Operations
- Section VIII - Design Day Schedules

II. Airport Overview

This section provides a brief overview of the current role of ORD within the Chicago Airport System and some general comparisons of the Airport’s activity volumes in relation to other large hub airports in the country.

Scheduled commercial passenger service in the Chicago Region is provided at ORD and Chicago Midway Airport (Midway). The City, through the Department of Aviation, owns and operates both airports. The City also operates Merrill C. Meigs Field, a reliever facility located in the Chicago Lakefront. The Gary/Chicago Airport is also located in the Chicago Region; however, this facility does not currently provide scheduled commercial passenger service (even though Panam Airways

previously provided service from this facility in the past).¹ **Exhibit II-1** provides a graphical depiction of the system of airports within the Chicago Region.

Table II-1 summarizes historical enplanements for ORD and Midway from 1991 through 2002. As shown, ORD's share of enplanements in the Chicago Airport System ranged from a high of 93.8 percent in 1992 to a low of 80.1 percent in 2002. Strong growth in enplanements is expected to continue at Midway Airport due primarily to increased point-to-point, low-fare service provided by Southwest and American Trans Air. However, any significant growth will ultimately be constrained by the capacity of Midway's airfield facilities. As a result, ORD is expected to continue to serve as the primary commercial service airport within the Chicago Region for the foreseeable future.

Table II-1

Historical Enplanements¹ – Chicago's O'Hare International and Midway Airports, 1991-2002

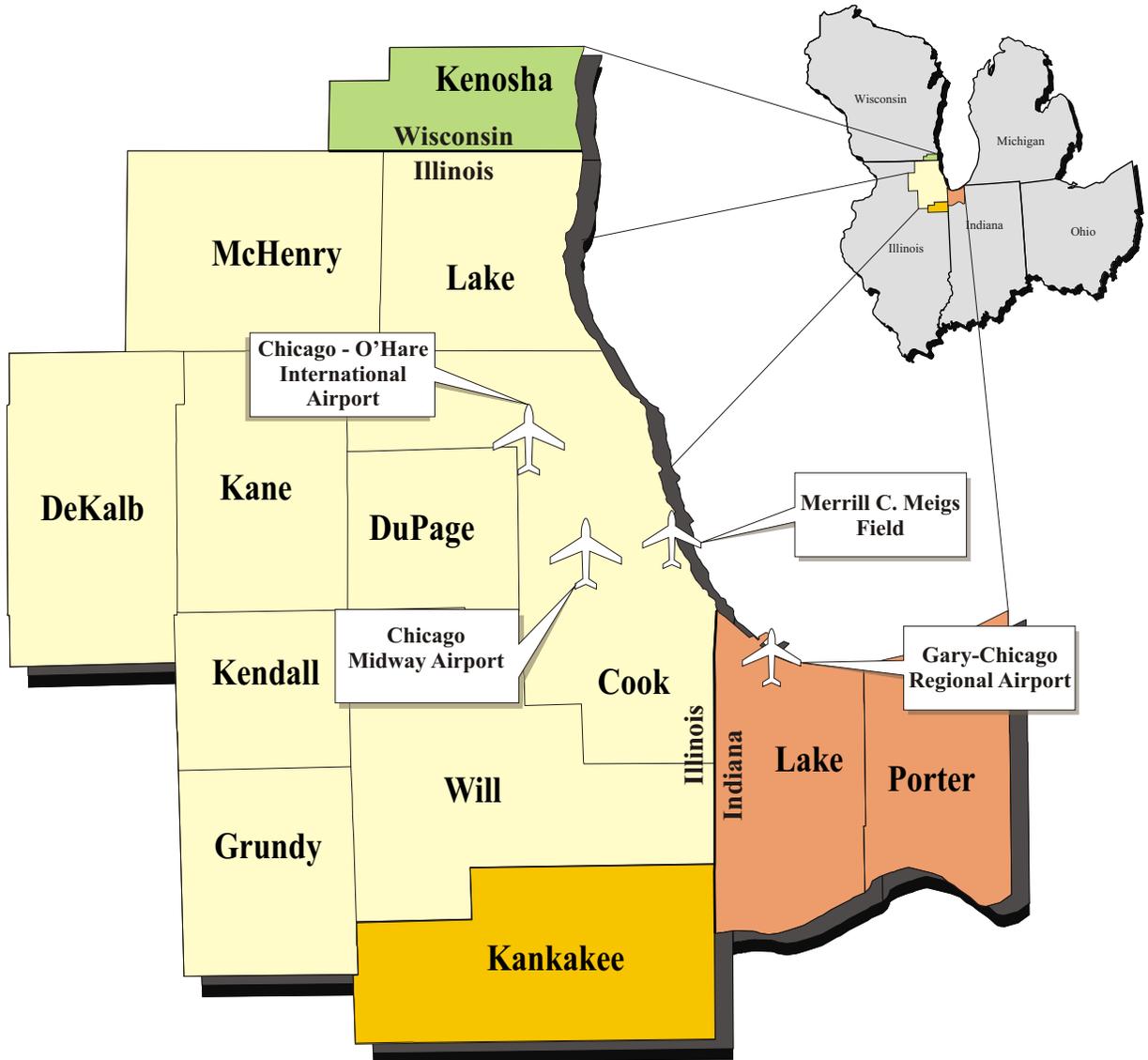
Year	Chicago O'Hare	Chicago Midway	Chicago Airport System	Chicago O'Hare as a Percent of Chicago Airport System
1991	29,376,349	3,398,987	32,775,336	89.6%
1992	31,655,074	2,089,005	33,744,079	93.8%
1993	31,983,998	3,129,849	35,113,847	91.1%
1994	32,718,725	4,467,770	37,186,495	88.0%
1995	32,861,460	4,679,343	37,540,803	87.5%
1996	34,067,885	4,631,286	38,699,171	88.0%
1997	34,774,114	4,604,356	39,378,470	88.3%
1998	35,759,044	5,310,909	41,069,953	87.1%
1999	35,947,083	6,377,686	42,324,769	84.9%
2000	35,700,525	7,325,397	43,025,922	83.0%
2001	33,310,203	7,407,025	40,717,228	81.8%
2002	32,918,936	8,156,138	41,075,074	80.1%

¹Excludes passenger enplanements reported within all-cargo, general aviation, miscellaneous, and military activities.

Source: City of Chicago, Airport Activity Statistics
Prepared by: Ricondo & Associates, Inc., February 2003

Table II-2 presents domestic origin-destination (O&D) passengers for the Airport and the nation. As shown, domestic O&D activity at the Airport increased from approximately 22.4 million passengers in 1990 to approximately 26.9 million in 2000. This increase represents a compounded annual growth rate of 1.9 percent during this period, compared to 3.4 percent nationwide. The Airport's share of U.S. domestic O&D passengers decreased between 1990 and 2000, from 3.6 percent in 1990 to 3.1 percent in 2000.

¹ In 1995, the City and the City of Gary, Indiana executed an agreement establishing the Chicago-Gary Regional Airport Authority. This agreement provides for certain coordination in development and operation between the City's airports and Gary/Chicago Airport.



Legend

- Chicago PMSA
- Gary PMSA
- Kankakee PMSA
- Kenosha PMSA

Source: Cartesia Map Art 2.0.
Prepared by: Ricondo & Associates, Inc.

Exhibit II-1

Chicago Region

Table II-2

Historical Domestic O&D Passengers

Year	ORD Domestic O&D Passengers	ORD Annual Growth	U.S. Domestic O&D Passengers	U.S. Annual Growth	ORD Share of U.S. O&D Passengers	ORD Domestic Enplaned and Deplaned Passengers ¹	ORD O&D Percentage
1990	22,431,600	-	619,417,680	-	3.6%	55,141,922	40.7%
1991	22,800,970	1.6%	597,364,310	-3.6%	3.8%	55,024,475	41.4%
1992	24,395,420	7.0%	618,027,190	3.5%	3.9%	59,100,442	41.3%
1993	23,563,840	-3.4%	642,770,900	4.0%	3.7%	59,097,767	39.9%
1994	23,180,370	-1.6%	690,214,830	7.4%	3.4%	60,132,677	38.5%
1995	24,584,090	6.1%	723,178,310	4.8%	3.4%	59,959,350	41.0%
1996	26,084,870	6.1%	765,862,040	5.9%	3.4%	61,771,776	42.2%
1997	26,979,030	3.4%	789,081,200	3.0%	3.4%	62,330,807	43.3%
1998	27,227,960	0.9%	798,797,500	1.2%	3.4%	63,103,113	43.1%
1999	26,797,280	-1.6%	831,774,400	4.1%	3.2%	62,435,954	42.9%
2000	26,947,430	0.6%	864,668,800	4.0%	3.1%	61,249,405	44.0%
2001	24,732,050	-8.2%	806,362,990	-6.7%	3.1%	57,454,583	43.0%
2000 (Oct-Dec)	6,701,460	-	215,354,620	-	3.1%	15,016,745	44.6%
2001 (Oct-Dec)	5,564,380	-17.0%	176,996,830	-17.8%	3.1%	12,822,798	43.4%
<u>Compounded Annual Growth Rate</u>							
1990 - 2000	1.9%		3.4%			1.1%	
1990 - 2001	0.9%		2.4%			0.4%	

¹ Excludes general aviation, military, helicopter, and miscellaneous passengers included in the City of Chicago's Airport Activity Statistics.

Sources: US DOT Origin & Destination Survey of Airline Passenger Traffic; City of Chicago, Airport Activity Statistics
 Prepared by: Ricondo & Associates, Inc., February 2003

As also shown in Table II-2, domestic O&D activity at the Airport decreased from approximately 26.9 million passengers in 2000 to approximately 24.7 million in 2001, a decrease of 8.2 percent during this period compared to the 6.7 percent decrease nationwide. The following factors contributed to this decrease in domestic O&D passengers at the Airport:

- On September 11, 2001 (hereinafter referred to as September 11), terrorists attacked the World Trade Center in New York and the Pentagon in Washington, D.C. using hijacked commercial aircraft as weapons. According to the FAA, aviation activity nationwide was already in a weakened state even before the events of September 11 and headed toward one of its worst years in over a decade. Also according to the FAA, passenger demand began to decline in February 2001 and air carrier finances turned negative in the first quarter of 2001, primarily due to declining high-yield business traffic and rapidly escalating labor costs.
- Additionally, economic indicators in the nation prior to September 11 were beginning to show signs of a recession. On November 2001, the National Bureau of Economic Research officially announced that the U.S. economy had entered its 10th recession since the end of World War II in March 2001. The loss of household wealth dampened consumer confidence and significantly reduced consumer spending. The effects of September 11 accelerated the downturn in consumer spending on consumer goods and services, including spending on air travel.

Reductions in operating levels at the Airport from those that existed prior to September 11 may continue for a period of time and to a degree that is uncertain. A number of airlines, including United, were experiencing financial difficulties prior to September 11, with their situation worsened by the events of September 11, 2001. US Airways filed for reorganization under Chapter 11 of the Bankruptcy Code on August 11, 2002; and has targeted emergence from Chapter 11 in the first quarter of 2003. Similarly, United filed for an 18-month reorganization under Chapter 11 on December 9, 2002; and according to agreements it made with a coalition of banks led by Chicago-based Bank One Corporation to obtain \$1.5 billion in financing to keep operating, United must return to break-even cash flow by October 2003 and record a cash surplus of \$112 million by the end of November 2003.

Table II-3 presents a comparison of international and total enplanements at top U.S. gateway airports for selected calendar years. As shown, the Airport ranked fifth behind John F. Kennedy International, Miami International, Los Angeles International, and Honolulu International airports in international enplanements in 1990 and 1995; and ranked fourth in 2000 and 2001 by surpassing Honolulu International Airport during these years. As also shown, the Airport's percentage of international passengers to total enplaned passengers increased from 7.9 percent in 1990 to 10.0 percent in 1995, and to 13.9 percent in 2001.

Table II-4 summarizes historical operations at ORD and Midway from 1991 through 2002. Once again, ORD's share of aircraft operations for the Chicago Airport System (excluding Meigs Field) ranged from a high of 82.1 percent in 1992 to a low of 74.2 percent in 1991. In 2002, ORD maintained a 75.2 percent share of the two airport's total operations.

Nonetheless, aircraft operations have grown steadily at ORD since 1998, from 883,761 total annual operations to 922,817 total annual operations in 2002. In general, historical aircraft operations at the Airport have been regulated by the High Density Rule (HDR). Only recently has ORD experienced unregulated traffic with the elimination of the HDR effective July 1, 2001, approved under the Wendell H. Ford Aviation Investment and Reform Act for the 21st Century. However, the events of

Table II-3

Comparison of top U.S. Gateway Airports

Airport	International Enplanements				Total Enplanements				International Share of Total			
	1990	1995	2000	2001	1990	1995	2000	2001	1990	1995	2000	2001
New York - Kennedy	8,992,999	8,381,084	9,194,966	8,319,000	14,714,206	14,985,951	16,274,588	14,674,500	61.1%	55.9%	56.5%	56.7%
Los Angeles	4,989,775	6,846,329	8,780,183	8,068,058	23,001,205	27,234,353	33,836,077	31,007,930	21.7%	25.1%	25.9%	26.0%
Miami	5,046,612	7,179,328	8,096,068	7,678,316	12,928,208	16,594,647	16,756,422	15,876,629	39.0%	43.3%	48.3%	48.4%
Chicago - O'Hare	2,317,673	3,298,380	5,048,996	4,616,337	29,419,002	32,861,460	35,700,525	33,310,203	7.9%	10.0%	14.1%	13.9%
San Francisco	2,155,061	2,981,341	4,023,555	3,787,381	15,513,618	18,162,551	20,196,217	17,047,645	13.9%	16.4%	19.9%	22.2%
New York - Newark	1,499,527	1,926,350	4,199,963	3,589,000	11,103,603	13,320,486	16,948,663	15,278,000	13.5%	14.5%	24.8%	23.5%
Houston - George Bush	1,019,956	1,445,941	2,830,768	2,829,418	8,802,065	11,994,451	17,520,633	17,365,796	11.6%	12.1%	16.2%	16.3%
Atlanta	962,366	1,436,609	2,916,309	2,815,899	23,814,719	28,857,835	40,154,824	38,095,214	4.0%	5.0%	7.3%	7.4%
Honolulu	2,528,582	3,069,528	2,567,293	2,147,395	11,282,886	11,542,683	11,264,853	9,919,848	22.4%	26.6%	22.8%	21.6%
Boston	1,662,914	1,644,116	2,150,876	2,025,545	11,398,288	12,043,969	13,888,052	12,086,186	14.6%	13.7%	15.5%	16.8%
Washington - Dulles	643,981	1,316,295	2,083,201	1,961,394	5,105,137	6,147,787	9,971,630	8,920,092	12.6%	21.4%	20.9%	22.0%
Orlando	863,893	1,156,689	1,181,168	998,980	9,101,342	11,137,301	15,318,137	14,055,294	9.5%	10.4%	7.7%	7.1%

Sources: Airports Council International; City of Chicago, Airport Activity Statistics
 Prepared by: Ricondo & Associates, Inc., February 2003

September 11 and the economic slowdown have also affected demand volumes at the Airport and daily traffic distribution and peaking patterns since July 1, 2001.

Table II-4

Historical Operations – Chicago's O'Hare International and Midway Airports, 1991-2001

<u>Year</u>	<u>Chicago O'Hare</u>	<u>Chicago Midway</u>	<u>O'Hare and Midway Combined</u>	<u>Chicago O'Hare as a Percent of Combined Total</u>
1991	810,865	281,110	1,091,975	74.2%
1992	813,896	177,009	990,905	82.1%
1993	841,193	198,311	1,039,504	80.9%
1994	859,208	271,171	1,130,379	76.0%
1995	883,062	257,216	1,140,278	77.4%
1996	900,279	255,713	1,155,992	77.9%
1997	909,593	265,572	1,175,165	77.4%
1998	883,761	278,644	1,163,405	76.0%
1999	896,104	297,017	1,193,121	75.1%
2000	884,783	298,115	1,182,898	74.8%
2001	908,989	278,734	1,187,723	76.5%
2002	922,817	304,304	1,227,121	75.2%

Source: City of Chicago, Airport Activity Statistics
Prepared by: Ricondo & Associates, Inc., February 2003

Table II-5 presents the Airport's worldwide ranking of activity in 2001. As shown, the Airport ranked second worldwide in total passengers during this period with approximately 67.4 million enplaned and deplaned passengers; first worldwide in total operations with approximately 912,000 takeoffs and landings; and twelfth worldwide in total cargo with approximately 1.4 million enplaned and deplaned tons. Except for total cargo, these worldwide rankings were similar to those achieved by the Airport in 1991 (first, first, and fifth worldwide, respectively).

III. Historical Airport Activity

The following sections review the Airport's historical activity in terms of passenger traffic, air service, aircraft operations, and cargo activity.

3.1 Passenger Activity

Table III-1 presents historical data on total enplaned passengers (domestic and international activity combined) at the Airport and the nation. As shown, total passenger activity at the Airport increased from approximately 29.4 million enplanements in 1990 to approximately 35.7 million in 2000. This increase represents a compounded annual growth rate of 2.0 percent during this period, compared to 3.4 percent for the nation. The Airport's share of total U.S. enplaned passengers decreased from 5.9 percent in 1990 to 5.1 percent in 2000, reflective of the lower compounded annual growth rate experienced at the Airport than that for the nation during this period.

Table II-5

Top 15 Worldwide Ranking of Airports by Activity - 2001

Rank	Airport	Total Passengers	Airport	Total Operations	Airport	Total Cargo (metric tonnes)
1	Atlanta (ATL)	75,858,500	Chicago (ORD)	911,917	Memphis (MEM)	2,631,631
2	Chicago (ORD)	67,448,064	Atlanta (ATL)	890,494	Hong Kong (HKG)	2,100,276
3	Los Angeles (LAX)	61,606,204	Dallas/Fort Worth (DFW)	783,546	Anchorage (ANC) ¹	1,873,750
4	London (LHR)	60,743,084	Los Angeles (LAX)	738,114	Los Angeles (LAX)	1,774,402
5	Tokyo (HND)	58,692,688	Phoenix (PHX)	553,310	Tokyo (NRT)	1,680,937
6	Dallas/Fort Worth (DFW)	55,150,693	Paris (CDG)	523,400	Miami (MIA)	1,639,760
7	Frankfurt (FRA)	48,559,980	Detroit (DTW)	522,132	Frankfurt (FRA)	1,613,179
8	Paris (CDG)	47,996,529	Minneapolis (MSP)	501,465	Paris (CDG)	1,591,310
9	Amsterdam (AMS)	39,531,123	Las Vegas (LAS)	493,722	Singapore (SIN)	1,529,930
10	Denver (DEN)	36,092,806	Denver (DEN)	486,030	Louisville (SDF)	1,468,837
11	Phoenix (PHX)	35,439,031	St. Louis (STL)	474,161	New York (JFK)	1,430,727
12	Las Vegas (LAS)	35,180,960	Miami (MIA)	471,008	Chicago (ORD)	1,365,123
13	Houston (IAH)	34,803,580	Houston (IAH)	470,916	London (LHR)	1,263,572
14	San Francisco (SFO)	34,632,474	Philadelphia (PHL)	466,985	Amsterdam (AMS)	1,234,161
15	Minneapolis/St. Paul (MSP)	34,308,389	London (LHR)	463,568	Incheon (ICN)	1,196,843

Sources: Airports Council International; City of Chicago, Airport Activity Statistics
 Prepared by: Ricondo & Associates, Inc., February 2003

Table III-1

Historical Enplanements

Year	DOMESTIC ACTIVITY					INTERNATIONAL ACTIVITY					TOTAL ACTIVITY				
	Airport Enplanements ¹	Annual Growth	U.S. Enplanements ²	Annual Growth	Airport Share of U.S. Enplanements	Airport Enplanements ¹	Annual Growth	U.S. Enplanements ²	Annual Growth	Airport Share of U.S. Enplanements	Airport Enplanements ¹	Annual Growth	U.S. Enplanements ²	Annual Growth	Airport Share of U.S. Enplanements
1990	27,101,329		456,600,000	-		2,317,673		41,300,000	-	5.6%	29,419,002	-	497,900,000	-	5.9%
1991	27,098,675	0.0%	445,900,000	-2.3%	6.1%	2,277,674	-1.7%	39,700,000	-3.9%	5.7%	29,376,349	-0.1%	485,600,000	-2.5%	6.0%
1992	29,121,304	7.5%	464,700,000	4.2%	6.3%	2,533,770	11.2%	42,600,000	7.3%	5.9%	31,655,074	7.8%	507,300,000	4.5%	6.2%
1993	29,101,964	-0.1%	470,400,000	1.2%	6.2%	2,882,034	13.7%	45,200,000	6.1%	6.4%	31,983,998	1.0%	515,600,000	1.6%	6.2%
1994	29,715,188	2.1%	511,300,000	8.7%	5.8%	3,003,537	4.2%	46,300,000	2.4%	6.5%	32,718,725	2.3%	557,600,000	8.1%	5.9%
1995	29,563,080	-0.5%	531,100,000	3.9%	5.6%	3,298,380	9.8%	48,600,000	5.0%	6.8%	32,861,460	0.4%	579,700,000	4.0%	5.7%
1996	30,538,684	3.3%	558,100,000	5.1%	5.5%	3,529,201	7.0%	50,000,000	2.9%	7.1%	34,067,885	3.7%	608,100,000	4.9%	5.6%
1997	30,887,134	1.1%	579,100,000	3.8%	5.3%	3,886,980	10.1%	52,300,000	4.6%	7.4%	34,774,114	2.1%	631,400,000	3.8%	5.5%
1998	31,460,468	1.9%	592,100,000	2.2%	5.3%	4,298,576	10.6%	53,100,000	1.5%	8.1%	35,759,044	2.8%	645,200,000	2.2%	5.5%
1999	31,190,082	-0.9%	613,300,000	3.6%	5.1%	4,757,001	10.7%	53,300,000	0.4%	8.9%	35,947,083	0.5%	666,600,000	3.3%	5.4%
2000	30,651,529	-1.7%	640,500,000	4.4%	4.8%	5,048,996	6.1%	54,800,000	2.8%	9.2%	35,700,525	-0.7%	695,300,000	4.3%	5.1%
2001	28,693,866	-6.4%	627,500,000 ³	-2.0%	4.6%	4,616,337	-8.6%	55,000,000 ³	0.4%	8.4%	33,310,203	-6.7%	682,500,000 ³	-1.8%	4.9%
2002	26,693,777	-7.0%	550,300,000 ⁴	-12.3%	4.9%	4,358,579	-5.6%	50,000,000 ⁴	-9.1%	0.0%	31,052,356	-6.8%	600,300,000 ⁴	-12.0%	5.2%
Compounded Annual Growth Rate															
1990-2000		1.2%		3.4%			8.1%		2.9%			2.0%		3.4%	
2000 - 2001		-6.4%		-2.0%			-8.6%		0.4%			-8.9%		-1.8%	
2001 - 2002		-7.0%		-12.3%			-5.6%		-9.1%			-6.8%		-12.0%	

¹ Excludes all-cargo, general aviation, military, helicopter, and miscellaneous passengers included in the City of Chicago's Airport Activity Statistics. Canadian activity reflected within international activity (as presented in the City's Airport Activity Statistics).

² Twelve months ending September 30.

³ Estimated by the FAA.

⁴ Projected by the FAA.

Total enplanements at the Airport decreased 8.9 percent in 2001 from 2000 levels, and have continued decreasing in 2002. This overall decrease in passenger activity at the Airport following September 11 is reflected in the following changes in certain operational activity at the Airport:

- United was one of several major airlines to experience significant losses following September 11, and consequently reduced service levels considerably at the Airport from approximately 430 daily departures in August 2001 to approximately 340 daily departures in January 2002, and increasing to approximately 400 daily departures in September 2002.
- American reduced its service levels at the Airport from approximately 350 daily departures in August 2001 to approximately 280 daily departures in January 2002, and increasing to approximately 330 daily departures in September 2002.
- International markets also experienced significant declines following September 11, with a decrease in activity from approximately 120 daily departures in August 2001 to approximately 90 daily departures in January 2002, and increasing to approximately 100 daily departures in September 2002.

Table III-1 also presents historical data on domestic enplaned passengers at the Airport and the nation. As shown, domestic passenger activity at the Airport increased from approximately 27.1 million enplanements in 1990 to approximately 30.7 million in 2000. This increase represents a compounded annual growth rate of 1.2 percent during this period, comparable to the 3.4 percent growth rate for the nation. The Airport's share of domestic U.S. enplaned passengers decreased from 6.1 percent in 1990 to 4.8 in 2000. Due to the effects of September 11 and the economic slowdown, domestic enplanements at the Airport decreased 6.4 percent in 2001 from 2000 levels, and like ORD's total passenger enplanements that are primarily comprised of domestic traffic, have continued decreasing in 2002.

In addition, Table III-1 presents historical data on international enplaned passengers at the ORD and the nation. As shown, international passenger activity at the Airport increased from approximately 2.3 million enplanements in 1990 to approximately 5.0 million in 2000. This increase represents a compounded annual growth rate of 8.1 percent during this period, compared to the 2.9 percent growth rate for U.S. flag carriers nationwide. The Airport's share of international U.S. enplaned passengers increased from 5.6 percent in 1990 to 9.2 percent in 2000, reflective of the higher compounded annual growth rate experienced at ORD than that for the nation during this period. Once again, due to the effects of September 11 and the economic slowdown, international enplanements at the Airport decreased 8.6 percent in 2001 from 2000 levels, and continued to decrease in 2002.

An important airport characteristic is the distribution of its O&D markets, which is a function of air travel demands and available services and facilities. **Table III-2** presents a comparison of the Airport's top 50 domestic O&D markets in 1996 versus 2001. Given the Airport's central location in the United States, the O&D markets are predominately medium-haul markets. As shown, the Airport's O&D markets in 1996 and 2001 had an average stage length (i.e., passenger trip distance) of 1,133 and 1,190 miles, respectively, compared to 799 and 839 miles nationwide. The average stage length for the Airport has historically been higher than that for the nation, reflecting the strong local demand for service to east coast markets such as New York and Washington and to west coast markets such as Los Angeles and San Francisco. Notable changes in passenger demand occurred in 2001 from 1996 levels from the Airport to Las Vegas (from a ranking of 14th in 1996 to 7th in 2001) due to low-fare service provided by America West and National; as well as increased demand to Fort

Table III-2

Primary Domestic O&D Passenger Markets

1996					2001				
Rank	Market	Nonstop Service ¹	Trip Length ²	Total O&D Passengers	Rank	Market	Nonstop Service ¹	Trip Length ²	Total O&D Passengers
1	New York/Newark	•	MH	2,438,380	1	New York/Newark	•	MH	2,031,230
2	Atlanta	•	MH	968,750	2	Los Angeles	•	MH	1,057,340
3	Los Angeles	•	MH	956,520	3	Atlanta	•	MH	840,800
4	Dallas/Fort Worth	•	MH	799,240	4	Phoenix	•	MH	759,440
5	Washington	•	MH	783,010	5	San Francisco	•	LH	746,060
6	Boston	•	MH	774,490	6	Washington	•	MH	743,010
7	Phoenix	•	MH	765,130	7	Las Vegas	•	MH	706,440
8	Detroit	•	SH	743,230	8	Orlando	•	MH	652,140
9	San Francisco	•	LH	719,010	9	Philadelphia/Camd	•	MH	643,000
10	Denver	•	MH	672,550	10	Denver	•	MH	638,430
11	Orlando	•	MH	655,240	11	Detroit	•	SH	620,300
12	Philadelphia/Camd	•	MH	609,630	12	Dallas/Fort Worth	•	MH	617,910
13	Minneapolis/St Pa	•	SH	579,060	13	Boston	•	MH	603,970
14	Las Vegas	•	MH	576,840	14	Minneapolis/St Pa	•	SH	510,750
15	Houston	•	MH	508,790	15	Houston	•	MH	502,250
16	Baltimore/Wash In	•	MH	506,840	16	Fort Lauderdale	•	MH	445,540
17	St Louis	•	SH	488,310	17	St Louis	•	SH	431,360
18	Cleveland	•	SH	470,210	18	Baltimore/Wash In	•	MH	415,870
19	Miami	•	MH	420,840	19	Seattle/Tacoma	•	MH	394,330
20	Tampa	•	MH	400,460	20	San Diego	•	MH	380,160
21	Seattle/Tacoma	•	MH	374,560	21	Kansas City	•	SH	357,830
22	Kansas City	•	SH	349,510	22	Tampa	•	MH	355,740
23	San Diego	•	MH	324,610	23	Miami	•	MH	331,270
24	Fort Lauderdale	•	MH	295,050	24	Santa Ana	•	MH	321,250
25	Santa Ana	•	MH	281,210	25	Cleveland	•	SH	314,780
26	New Orleans	•	MH	255,360	26	Fort Myers	•	MH	284,820
27	Pittsburgh	•	SH	249,500	27	Hartford	•	MH	279,480
28	Hartford	•	MH	239,770	28	Columbus	•	SH	273,400
29	Raleigh/Durham	•	MH	237,400	29	Raleigh/Durham	•	MH	268,070
30	Columbus	•	SH	234,900	30	San Jose	•	LH	265,280
31	Cincinnati	•	SH	233,780	31	Pittsburgh	•	SH	255,110
32	Nashville	•	SH	230,040	32	New Orleans	•	MH	250,840
33	San Juan	•	LH	219,750	33	Charlotte	•	SH	216,070
34	Portland	•	MH	203,580	34	Portland	•	MH	213,150
35	Omaha	•	SH	202,800	35	Providence	•	MH	203,260
36	Salt Lake City	•	MH	199,480	36	Austin	•	MH	197,030
37	Indianapolis	•	SH	194,290	37	Cincinnati	•	SH	195,740
38	San Antonio	•	MH	193,210	38	Salt Lake City	•	MH	185,030
39	San Jose	•	LH	187,310	39	San Juan	•	LH	182,570
40	Charlotte	•	SH	183,460	40	Westchester Count	•	MH	162,040
41	West Palm Beach	•	MH	177,490	41	Nashville	•	SH	160,490
42	Austin	•	MH	168,680	42	San Antonio	•	MH	159,970
43	Westchester Count	•	MH	164,880	43	Tucson	•	MH	141,560
44	Memphis	•	SH	158,040	44	Honolulu (Intl)	•	LH	140,440
45	Fort Myers	•	MH	157,740	45	Indianapolis	•	SH	133,390
46	Reno	•	MH	150,920	46	Memphis	•	SH	130,030
47	Albuquerque	•	MH	141,260	47	Buffalo	•	SH	129,810
48	Honolulu (Intl)	•	LH	136,530	48	West Palm Beach	•	MH	129,690
49	Des Moines	•	SH	135,040	49	Omaha	•	SH	128,350
50	Jacksonville	•	MH	131,290	50	Reno	•	MH	116,940
Other Markets				4,836,900	Other Markets				4,508,290
Total				26,084,870	Total				24,732,050
<u>Average</u>					<u>Average</u>				
Airport ³			1,133 miles	Airport ³			1,190 miles		
United States			799 miles	United States			839 miles		

¹ As of November 13, 2002.² (SH) Short Haul = 1 to 600 miles
(MH) Medium Haul = 601 to 1,800 miles
(LH) Long Haul = over 1,800 miles³ Average calculated for all of the Airport's O&D markets.Source: US DOT Origin & Destination Survey of Airline Passenger Traffic
Prepared by: Ricondo & Associates, Inc., February 2003

Lauderdale (24th to 16th) due to low-fare service provided by Delta Express and Spirit. Decreasing passenger demand occurred in 2001 from 1996 levels from the Airport to Dallas (6th to 12th) and to Boston (6th to 13th) due to low-fare service provided by Southwest from Midway to these or nearby alternative markets.

Table III-3 presents historical data on the Airport's top 50 international O&D markets for 1995 and 2000 (calendar year 2000 is presently the most recent year for which a full-year of O&D data is available from the U.S. DOT T100 international market database). As shown, numerous international markets are represented including Mexico, Central and South America, the Caribbean, Europe, and the Pacific destinations. As shown, 26 of the Airport's top 50 O&D markets are served with nonstop service.

3.2 Aircraft Operations

Historically, ORD's aircraft operational activity has been constrained by air traffic rules enforced under the High-Density Rule (HDR). The HDR was implemented in 1968 by the FAA as a temporary measure to ease congestion and reduce delays at four of the nation's busiest airports: Chicago O'Hare International Airport, LaGuardia Airport, John F. Kennedy International Airport, and Ronald Regan Washington National Airport. Special air traffic rules were applied at these airports to restrict the number of instrument flight rules (IFR) operations during certain hours of the day, and allocate slots to air carriers for each takeoff or landing during these restricted periods. ORD was specifically limited to 155 operations per hour between 6:45 a.m. and 9:15 p.m.

The limit was originally established at 135 operations per hour and it covered only the peak operating periods of the day. The limit was later revised to 155 operations per hour, but its application was extended to cover additional time periods. The rule was subsequently amended and modified several times thereafter.

Despite being implemented as a temporary measure, the HDR was continuously extended and eventually enforced indefinitely by the FAA in the belief that federal regulation of operations was the only method to alleviate congestion and delays at these airports. On April 5, 2000, however, the Wendell H. Ford Aviation Investment and Reform Act for the 21st Century (Air-21) was enacted into law, which amended and called for the phasing out of the HDR. Air-21 called for the narrowing of the HDR window at ORD to the period between 2:45 p.m. and 8:14 p.m. effective July 1, 2001, and total elimination of slots at the Airport by July 1, 2002. In addition, various slot exemptions for aircraft under 71 seats, service to non- and small hubs, and international service were granted almost immediately upon the passing of Air-21. In general, historical aircraft operations at the Airport have been regulated by the HDR. Only recently has ORD experienced unregulated traffic with the elimination of the HDR; however, the events of September 11 and the economic slowdown have also affected demand volumes at the Airport and daily traffic distribution and peaking patterns.

Table III-4 presents historical operations at the Airport by major user group between 1990 and 2001. As shown, total activity at the Airport increased from 810,665 operations in 1990 to 911,917 in 2001. This increase represents a compounded annual growth rate of 1.1 percent during this period, compared to virtually no growth nationwide. The effects of September 11 and the economic slowdown did not have the same effect on total operations as it did total enplanements at the Airport. As shown, total aircraft operations at the Airport increased 0.3 percent in 2001. This increasing trend has continued through 2002, primarily due to a shifting of domestic passenger service from the majors/nationals to their code-sharing regional/commuter partners.

Table III-3

Primary International O&D Passenger Markets¹

1995					2000				
Rank	City	Country	Nonstop Service ²	Total O&D Passengers	Rank	City	Country	Nonstop Service ²	Total O&D Passengers
1	London	U.K.	•	360,554	1	London	U.K.	•	398,934
2	Toronto	Canada	•	220,410	2	Toronto	Canada	•	243,030
3	Mexico City	Mexico	•	132,691	3	Cancun	Mexico	•	221,555
4	Cancun	Mexico	•	123,064	4	Mexico City	Mexico	•	207,628
5	Paris	France	•	113,635	5	Tokyo	Japan	•	147,310
6	Tokyo	Japan	•	107,778	6	Paris	France	•	138,496
7	Puerto Vallarta	Mexico	•	103,556	7	Guadalajara	Mexico	•	109,102
8	Montreal	Canada	•	81,790	8	Dublin	Ireland	•	95,635
9	Montego Bay	Jamaica	•	79,184	9	Montego Bay	Jamaica	•	93,173
10	Acapulco	Mexico	•	65,335	10	Puerto Vallarta	Mexico	•	90,915
11	Grand Cayman	Cayman Is.	•	58,106	11	Rome	Italy	•	88,448
12	Manila	Philippines	•	57,340	12	Frankfurt	Germany	•	78,193
13	Guadalajara	Mexico	•	57,102	13	Amsterdam	Netherlands	•	76,035
14	Frankfurt	Germany	•	56,241	14	Seoul	S. Korea	•	65,298
15	Vancouver	Canada	•	51,970	15	Stockholm	Sweden	•	64,484
16	Warsaw	Poland	•	50,659	16	Santo Domingo	Dominican Republic	•	61,225
17	Hong Kong	Hong Kong	•	49,892	17	Montreal	Canada	•	61,060
18	Nassau	Bahamas	•	49,627	18	Singapore	Singapore	•	60,546
19	Amsterdam	Netherlands	•	46,153	19	Acapulco	Mexico	•	60,363
20	Rome	Italy	•	46,053	20	Vancouver	Canada	•	60,080
21	Munich	Germany	•	46,045	21	Vienna	Austria	•	55,343
22	Seoul	S. Korea	•	40,966	22	Munich	Germany	•	54,053
23	Zurich	Switzerland	•	40,812	23	Milan	Italy	•	51,643
24	San Jose	Costa Rica	•	32,413	24	Warsaw	Poland	•	50,124
25	Sao Paulo	Brazil	•	31,946	25	San Jose	Costa Rica	•	48,440
26	Athens	Greece	•	29,765	26	Madrid	Spain	•	47,575
27	Dublin	Ireland	•	29,431	27	Buenos Aires	Argentina	•	47,571
28	Manchester	U.K.	•	28,668	28	Tel Aviv	Israel	•	46,130
29	Aruba	Aruba	•	27,149	29	Manila	Philippines	•	45,042
30	Ixtapa	Mexico	•	26,735	30	Brussels	Belgium	•	44,444
31	Dusseldorf	Germany	•	26,058	31	Sao Paulo	Brazil	•	43,954
32	Milan	Italy	•	26,049	32	Lima	Peru	•	43,872
33	Calgary	Canada	•	25,830	33	Osaka	Japan	•	41,276
34	Tel Aviv	Israel	•	25,798	34	Krakow	Poland	•	39,975
35	Sydney	Australia	•	24,386	35	Zurich	Switzerland	•	39,590
36	Kingston	Jamaica	•	23,531	36	Nassau	Bahamas	•	39,379
37	Singapore	Singapore	•	23,313	37	Calgary	Canada	•	36,130
38	Osaka	Japan	•	23,261	38	Copenhagen	Denmark	•	35,036
39	Stuttgart	Germany	•	22,522	39	Sydney	Australia	•	34,789
40	Port Au Prince	Haiti	•	22,175	40	Ixtapa	Mexico	•	34,647
41	Santo Domingo	Dominican Republic	•	21,997	41	Istanbul	Turkey	•	33,999
42	Cozumel	Mexico	•	21,836	42	Taipei	Taiwan	•	33,978
43	Brussels	Belgium	•	21,102	43	Monterrey	Mexico	•	33,236
44	Taipei	Taiwan	•	20,865	44	Santiago	Chile	•	31,914
45	Stockholm	Sweden	•	20,734	45	Leon-Guanajuato	Mexico	•	31,536
46	Buenos Aires	Argentina	•	20,440	46	Morelia	Mexico	•	29,787
47	Guatemala	Guatemala	•	19,873	47	Manchester	U.K.	•	28,021
48	San Jose Del Cabo	Mexico	•	19,261	48	Bombay	India	•	27,755
49	Moscow	Russia	•	18,964	49	Zacatecas	Mexico	•	27,611
50	Berlin	Germany	•	18,277	50	Caracas	Venezuela	•	27,531
Other Markets				1,122,035	Other Markets				1,659,202
Total				3,813,377	Total				5,265,093

¹ Canadian markets only include U.S. Flag carriers, and does not include airlines that do not have aircraft with more than 60 seats.² As of November 13, 2002.

Table III-4

Historical Aircraft Operations

Calendar Year	ANNUAL ACTIVITY									
	Air Carrier (Domestic and International)		All-Cargo		General Aviation/Misc.		Military		Total	
	Operations	% of Total	Operations	% of Total	Operations	% of Total	Operations	% of Total	Operations	% of Total
1990	766,543	94.5%	14,718	1.8%	26,479	3.3%	3,125	0.4%	810,865	100.0%
1991	761,603	93.6%	15,495	1.9%	33,971	4.2%	2,827	0.3%	813,896	100.0%
1992	787,671	93.6%	16,240	1.9%	33,864	4.0%	3,418	0.4%	841,193	100.0%
1993	798,422	92.9%	15,946	1.9%	41,365	4.8%	3,475	0.4%	859,208	100.0%
1994	789,589	89.4%	17,129	1.9%	73,199	8.3%	3,145	0.4%	883,062	100.0%
1995	809,834	90.0%	18,338	2.0%	68,819	7.6%	3,288	0.4%	900,279	100.0%
1996	814,617	89.6%	19,184	2.1%	72,854	8.0%	2,938	0.3%	909,593	100.0%
1997	813,926	92.1%	20,630	2.3%	47,035	5.3%	2,170	0.2%	883,761	100.0%
1998	826,285	92.2%	24,325	2.7%	43,228	4.8%	2,266	0.3%	896,104	100.0%
1999	831,800	94.0%	23,984	2.7%	28,229	3.2%	770	0.1%	884,783	100.0%
2000	848,502	93.3%	23,952	2.6%	36,535	4.0%	0	0.0%	908,989	100.0%
2001	853,664	93.6%	21,105	2.3%	37,148	4.1%	0	0.0%	911,917	100.0%
Average Annual Growth Rates:										
1990-2001	1.0%		3.3%		3.1%		-74.3%		1.1%	

Notes:

¹ Historical Operations: as obtained from the City of Chicago's Department of Aviation Management Records.

² The total historic aircraft operations summarized above reflect the traffic volumes shown in the Year End reports (I.e., Year To Date issued in December of each year) prepared by the DOA. The summation of the individual monthly reports published by the DOA varies from the totals published in the Year End reports for some years.

Source: City of Chicago Airport Traffic Statistics

Prepared by: Ricondo & Associates, Inc., February 2003

General aviation activity at the Airport steadily decreased each year between 1997 and 2000 from the previous year's level, from 47,035 operations in 1997 to 36,535 in 2000. [According to the City's Department of Aviation, this decrease was primarily due to lower costs and less delays at outlying airports within the Chicago Region.] The effects of September 11 and the economic slowdown also affected general aviation activity at the Airport, with operations decreasing 19.5 percent in 2002 from 2001 levels.

Activity by all-cargo carriers at the Airport remained relatively stable prior to the effects of September 11 and the economic slowdown, averaging approximately 24,000 operations between 1998 and 2000. All-cargo activity at the Airport decreased 11.9 percent in 2001 from 2000 levels, and decreased an additional 1.5 percent in 2002 from 2001 levels.

In 1996, the City initiated the purchase of approximately 350 acres of land in the northeast quadrant of the Airport formerly used as a military base for Air Force operations. In 1995, the Defense Base Closure and Realignment Commission recommended that the largest remaining military unit at the Airport, the 126th Air Refueling Wing, be deactivated and relocated to Scott Air Force Base in St. Clair County, Illinois. With the move official in November 1999, there was little or no military activity reported at the Airport between 2000 and 2002.

3.3 Adjustments to Historical Activity Statistics

For purposes of deriving future design day activity schedules and terminal facility requirements, the following adjustments in the categorization of the Airport's historical activity were made to the data presented in the Airports Annual Traffic Summary Reports:

- Canadian activity, including passenger volumes and aircraft operations, served by scheduled domestic and foreign flag carriers are represented as domestic activity, since these flights typically receive Customs and Immigration screening at their originating Canadian market.
- Aviation activity represented under the headings of "General Aviation", "Miscellaneous", and "Helicopter" in the DOA's Airport Activity Statistics have been combined into one category titled General Aviation/Miscellaneous.
- In most cases, domestic commuter and domestic air carrier activity have been combined into a total Domestic category.

In addition, there were a few other small adjustments to the categorization of domestic and international airline activity. Summaries of the adjustments made to the airline activity and adopted for this demand analysis are presented in **Tables III-5 through III-8**.

IV. Airline Activity (Pre- and Post-September 11, 2001)

During 2002, the Airport had scheduled passenger service provided by 20 U.S. flag air carriers, scheduled and nonscheduled service by 23 foreign flag carriers, and nonscheduled service by eight charter airlines. In addition, 26 all-cargo carriers provided scheduled cargo service at the Airport. Scheduled passenger service is provided at the Airport by seven of the nation's eight major airlines, which represent the largest group of U.S. airlines in terms of their total revenues. These airlines

Table III-5**Historical Domestic Passenger Enplanements**

Year	Domestic Enplanements ¹	Domestic Enplanement Adjustments				Adjusted Domestic Enplanements
		Add-Other	Add-Canadian	Deduct-Express One	Deduct-Other	
1990	27,101,329	0	765,199	0	198	27,866,330
1991	27,098,675	0	727,707	0	62	27,826,320
1992	29,121,304	0	633,027	0	0	29,754,331
1993	29,101,964	0	812,632	0	4,603	29,909,993
1994	29,715,188	0	826,460	0	0	30,541,648
1995	29,563,080	1,673	931,300	0	0	30,496,053
1996	30,538,684	1,120	939,552	0	186	31,479,170
1997	30,887,134	0	971,642	0	0	31,858,776
1998	31,460,468	0	995,731	234	0	32,455,965
1999	31,190,082	0	1,027,230	119	3,741	32,213,452
2000	30,651,529	0	1,001,645	0	224	31,652,950
2001	28,693,866	0	794,894	0	0	29,488,760

Notes:

- ¹ As reported in the Airport Management Records. Domestic activity includes commuters.
- ² Add-Other represents domestic activity reported as international activity in the Airport's Management Records.
- ³ Deduct-Other represents international activity reported as domestic activity in the Airport's Management Records.
- ⁴ Express-One is a charter operator that was not included in this data inventory.

Sources: City of Chicago Airport Activity Statistics; Official Airline Guide; Ricondo & Associates, Inc.

Prepared by: Ricondo & Associates, Inc., February 2003

Table III-6**Historical International Passenger Enplanements**

Year	International Enplanements ¹	International Enplanement Adjustments			Adjusted International Enplanements
		Add-Other	Deduct-Other	Deduct-Canadian	
1990	2,317,673	198	0	765,199	1,552,672
1991	2,277,674	62	0	727,707	1,550,029
1992	2,533,770	0	0	633,027	1,900,743
1993	2,882,034	4,603	0	812,632	2,074,005
1994	3,003,537	0	0	826,460	2,177,077
1995	3,298,380	0	1,673	931,300	2,365,407
1996	3,529,201	186	1,120	939,552	2,588,715
1997	3,886,980	0	0	971,642	2,915,338
1998	4,298,576	0	0	995,731	3,302,845
1999	4,757,001	3,741	0	1,027,230	3,733,512
2000	5,048,996	224	0	1,001,645	4,047,575
2001	4,616,337	0	0	794,894	3,821,443

Notes:

¹ As reported in the Airport Management Records.² Add-Other represents international activity reported as domestic activity in the Airport's Management Records.³ Deduct-Other represents domestic activity reported as international activity in the Airport's Management Records.

Sources: City of Chicago Airport Activity Statistics; Official Airline Guide; Ricondo & Associates, Inc.

Prepared by: Ricondo & Associates, Inc., February 2003

Table III-7**Historical Domestic Air Carrier Operations**

Year	Domestic Departures ¹	Domestic Departures Adjustments				Adjusted Domestic
		Add-Other ²	Add-Canadian ⁵	Deduct-Express One ⁴	Deduct-Other ³	Departures
1990	363,585	0	7,874	0	173	371,286
1991	359,979	0	8,192	0	2	368,169
1992	370,557	9	8,892	0	108	379,350
1993	373,404	0	9,769	0	129	383,044
1994	367,965	0	10,317	0	87	378,195
1995	375,499	0	12,962	0	172	388,289
1996	376,534	1	12,742	10	143	389,124
1997	373,719	147	13,419	6	136	387,143
1998	377,070	86	13,761	3	299	390,615
1999	376,804	0	14,127	38	162	390,731
2000	381,819	0	14,943	148	142	396,472
2001	386,015	0	14,923	147	43	400,748

Notes:

¹ As reported in the Airport Management Records. Domestic activity includes commuters.

² Add-Other represents domestic activity reported as international activity in the Airport's Management Records.

³ Deduct-Other represents international activity reported as domestic activity in the Airport's Management Records.

⁴ Express-One is a charter operator that was not included in this data inventory.

⁵ Canadian departures obtained from 2001 FAA TAF database.

Sources: City of Chicago Airport Activity Statistics; Official Airline Guide; Ricondo & Associates, Inc.

Prepared by: Ricondo & Associates, Inc., February 2003

Table III-8

Historical International Air Carrier Operations

Year	International Departures ¹	International Departures Adjustments			Adjusted International
		Add-Other ²	Deduct-Other ³	Deduct-Canadian ⁴	Departures
1990	19,734	173	0	7,874	12,033
1991	20,661	2	0	8,192	12,471
1992	23,114	108	9	8,892	14,321
1993	25,912	129	0	9,769	16,272
1994	26,786	87	0	10,317	16,556
1995	29,464	172	0	12,962	16,674
1996	30,816	143	1	12,742	18,216
1997	33,307	136	147	13,419	19,877
1998	36,223	299	86	13,761	22,675
1999	39,184	162	0	14,127	25,219
2000	42,589	142	0	14,943	27,788
2001	40,966	43	0	14,923	26,086

Notes:

¹ As reported in the Airport Management Records.

² Add-Other represents international activity reported as domestic activity in the Airport's Management Records.

³ Deduct-Other represents domestic activity reported as international activity in the Airport's Management Records.

⁴ Canadian departures obtained from 2001 FAA TAF database.

include America West, American, Continental, Delta, Northwest, United, and US Airways.² **Table IV-1** lists the airlines serving the Airport during 2002.

Table IV-2 presents the scheduled U.S. flag air carrier base at the Airport since 1992. As shown, the Airport has had the benefit of a large and relatively stable air carrier base during the years depicted, which has helped promote competitive pricing and scheduling diversity in the Airport's major domestic markets. As also shown, 11 of the 20 U.S. flag airlines currently serving the Airport operated there for each of the years shown, including seven of the major U.S. airlines. Activity by the carriers (based on a schedule of activity for November 13, 2002) accommodating a major share of the passenger enplanements at the Airport are discussed below:

- **United**, with a 44.8 percent share of Airport enplanements in 2002, provided nonstop service to 62 domestic markets with a total of 366 daily flights; as well as a total of 23 daily flights to 12 international markets (see **Table IV-3**). Operating as United Express, **Atlantic Coast** and **Air Wisconsin** provide nonstop service to 63 domestic markets with a total of 191 daily flights.
- **American**, with a 30.4 percent share of Airport enplanements in 2002, provided nonstop service to 50 domestic markets with a total of 293 daily flights; as well as a total of 26 daily flights to 12 international markets. Serving as a code-sharing partner with American, **American Eagle** provides nonstop service to 44 markets with a total of 188 daily flights (including four daily flights to Ottawa).
- **Delta**, with a 2.1 percent share of Airport enplanements in 2002, provided nonstop service to three domestic markets with a total of 19 daily flights. **US Airways** (a 1.7 percent share of enplanements in 2002) provided nonstop service to three domestic markets with a total of 19 daily flights. **Northwest** (a 1.7 percent share of enplanements in 2002) provided nonstop service to three domestic markets with a total of 28 daily flights. **Continental** (a 1.5 percent share of enplanements in 2002) provided nonstop service to two domestic markets with a total of 18 daily flights. **America West** (a 1.0 percent share of enplanements in 2002) provided nonstop service to two domestic markets with a total of eight daily flights.

Table IV-4 presents the foreign flag air carrier base at the Airport since 1992. As shown, 12 of the 23 current foreign flag carriers serving the Airport operated there for each of the years depicted. Activity by these carriers providing significant activity at the Airport are discussed below:

- **Air Canada**, with a 1.1 percent share of Airport enplanements in 2002, provides nonstop service to Calgary, Montreal, Ottawa, Toronto, Vancouver, and Winnipeg with a total of 18 daily flights.
- **Mexicana**, with a 0.8 percent share of Airport enplanements in 2002, provides nonstop service to Guadalajara, Mexico City, Morelia, and Monterrey with a total of six daily flights.
- **Lufthansa**, with a 0.8 percent share of Airport operations in 2002, provides nonstop service to Frankfurt and Munich with one daily flight to each city.
- **British Airways**, with a 0.5 percent share of Airport operations in 2002, provides nonstop service to London with a total of two daily flights.

² Southwest Airlines, which provides scheduled service at Midway, is the only major U.S. airline currently not serving the Airport.

Table IV-2

Scheduled U.S. Flag Air Carrier Base ¹

Air Carrier	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
Air Wisconsin	●	●	●	●	●	●	●	●	●	●	●
American Trans Air	●	●	●	●	●	●	●	●	●	●	●
America West	●	●	●	●	●	●	●	●	●	●	●
American ²	●	●	●	●	●	●	●	●	●	●	●
American Eagle	●	●	●	●	●	●	●	●	●	●	●
Continental	●	●	●	●	●	●	●	●	●	●	●
Delta	●	●	●	●	●	●	●	●	●	●	●
Great Lakes	●	●	●	●	●	●	●	●	●	●	●
Northwest	●	●	●	●	●	●	●	●	●	●	●
U.S. Airways ³	●	●	●	●	●	●	●	●	●	●	●
United ⁴	●	●	●	●	●	●	●	●	●	●	●
Atlantic Coast							●	●	●	●	●
Alaska									●	●	●
Comair									●	●	●
Spirit									●	●	●
Continental Express										●	●
National ⁵										●	●
North American										●	●
Chautauqua											●

Air Carriers No Longer Serving the Airport

Mesa									●	●	
Sun Country	●	●	●	●	●	●	●	●	●	●	

¹ January-December 2002.

² Acquired Reno Air in 1998 and Trans World in 2001.

³ US Airways filed for reorganization under Chapter 11 of the Bankruptcy Code on August 11, 2002. This airline has targeted emergence from Chapter 11 in the first quarter of CY 2003.

⁴ United filed for an 18-month reorganization under Chapter 11 of the Bankruptcy Code on December 9, 2002. According to agreements must return to break-even it made to a coalition of banks led by Chicago-based Bank One Corporation to obtain \$1.5 billion in financing to keep operating, United cash flow by October 2003 and record a cash surplus of \$112 million by the end of November 2003.

⁵ National filed for bankruptcy protection in December 2000 and subsequently ceased operations on November 6, 2002.

Table IV-3

Scheduled Nonstop Activity For U.S. Flag & Foreign Flag Carriers

U.S. Flag Air Carrier	Domestic Markets		International Markets		Foreign Flag Air Carrier	Markets Served	Daily Flights
	Number of Markets	Daily Flights	Markets Served	Daily Flights			
United ²	62	366	Amsterdam, Paris, Frankfurt, Sao Paulo, Hong Kong, London, Mexico City, Tokyo, Beijing, San Juan, Vancouver, Toronto	23	Air Canada	Ottawa, Montreal, Calgary, Toronto, Vancouver, Winnipeg	18
American	50	293	Brussels, Paris, Frankfurt, London, Manchester, Mexico City, Tokyo, Los Cabos, San Juan, Montreal, Calgary, Toronto	26	Mexicana	Guadalajara, Morelia, Monterrey, Mexico City	6
Atlantic Coast	44	124			Lufthansa	Frankfurt, Munich	2
American Eagle	43	184	Ottawa	4	Scandinavian	Stockholm, Copenhagen	2
Air Wisconsin	19	67			Air France	Paris	1
Spirit	5	8			AeroMexico	Mexico City	1
Northwest	3	28			Alitalia	Milan	1
Delta	3	19			British Airways	London	2
U.S. Airways ³	3	19			British Midland	Manchester	1
Comair	3	10			Aer Lingus	Dublin	1
Great Lakes	3	10			Iberia	Madrid	1
Continental	2	18			Japan	Tokyo	1
America West	2	8			Air Jamaica	Montego Bay	1
Continental Express	1	6			KLM-Royal Dutch	Amsterdam	1
Chautauqua	1	4			Swiss	Zurich	1
National ⁴	1	3			Turkish	Istanbul	1
Alaska	1	1					
North American	1	1					
Total		1,169		53			41

¹ Based on November 13, 2002 daily schedule.

² United filed for an 18-month reorganization under Chapter 11 of the Bankruptcy Code on December 9, 2002. According to agreements it made to a coalition of banks led by Chicago-based Bank One Corporation to obtain \$1.5 billion in financing to keep operating, United must return to break-even cash flow by October 2003 and record a cash surplus of \$112 million by the end of November 2003.

³ US Airways filed for reorganization under Chapter 11 of the Bankruptcy Code on August 11, 2002. This airline has targeted emergence from Chapter 11 in the first quarter of CY 2003.

⁴ National filed for bankruptcy protection in December 2000 and subsequently ceased operations on November 6, 2002.

Table IV-4

Scheduled Foreign Flag Air Carrier Base ¹

Air Carrier	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
Aer Lingus	•				•	•	•	•	•	•	•
Air Canada	•	•	•	•	•	•	•	•	•	•	•
Air France	•	•	•	•	•	•	•	•	•	•	•
Alitalia	•	•	•	•	•	•	•	•	•	•	•
British Airways	•	•	•	•	•	•	•	•	•	•	•
El Al	•	•	•	•	•	•	•	•	•	•	•
Iberia	•							•	•	•	•
Japan	•	•	•	•	•	•	•	•	•	•	•
KLM-Royal Dutch	•	•	•	•	•	•	•	•	•	•	•
Korean	•	•	•	•	•	•	•	•	•	•	•
LOT-Polish	•	•	•	•	•	•	•	•	•	•	•
Lufthansa	•	•	•	•	•	•	•	•	•	•	•
Mexicana	•	•	•	•	•	•	•	•	•	•	•
Scandinavian	•			•	•	•	•	•	•	•	•
Swiss	•	•	•	•	•	•	•	•	•	•	•
Air Jamaica	•	•			•	•	•	•	•	•	•
Royal Jordanian		•	•	•	•	•	•	•	•	•	•
Kuwait				•	•	•	•	•	•	•	•
Air India				•	•	•	•	•	•	•	•
Turkish						•	•	•	•	•	•
AeroMexico									•	•	•
British Midland										•	•
Singapore										•	•

Scheduled Foreign Flag Carriers No longer Serving the Airport

All Nippon								•	•	•	
Virgin Atlantic								•	•	•	
Aeroflot	•	•	•	•	•	•	•	•	•	•	
Sabena	•	•	•	•	•	•	•	•	•	•	
Austrian	•	•	•	•					•	•	
Tarom	•	•	•	•	•	•	•	•	•		
Taesa		•	•	•	•	•	•	•			
Aviateca	•	•	•	•							
Czech	•	•	•	•							
Olympic	•	•	•								
Varig	•	•	•								
JAT-Yugoslavian	•										

¹ As of December 2002.

Source: City of Chicago

Prepared by: Ricondo & Associates, Inc., February 2003

V. Demand Analysis Overview

The aviation demand analysis for the OMP comprised the utilization of previously developed forecasts to define aviation activity profiles and demand thresholds for ORD. The adopted forecasts and the methodology utilized in the development of the associated derivative profiles and future design day schedules represent unconstrained demand scenarios. These unconstrained demand scenarios assume that there are, or will be sufficient airport facilities/infrastructure to allow the Airport to serve the demand for air transportation imposed by the region's demographic and socioeconomic attributes. In addition, it is also assumed that regulatory constraints on activity, such as the High Density Rule, are non-existent and thus, do not limit the Airport's ability to process its true demand.

Other Airport operating factors and future demand assumptions considered include the following:

- Activity at the Airport will recover from the events of September 11 and the economic slowdown, with growth in the short term resulting in activity reaching 2000 levels generally within the 2003 to 2004 period as projected by the FAA.
- Following this recovery in activity, long-term demand is assumed to increase as a result of continued growth in population and strong economic conditions in the Chicago Region.
- Domestic mainline carriers will continue to leverage passenger traffic and service routes with their respective regional/commuter partners during the projection period, resulting in continued growth by the commuter/regional carriers and increased volumes of regional jet aircraft operating at ORD.
- United will emerge from bankruptcy as planned within 18 months. United and American will continue to operate major connecting hubbing facilities at the Airport such that O&D passengers will continue to account for 40-50 percent of the total domestic passengers at the Airport during the projection period.
- The Airport provides airlines access to a populous and relatively wealthy market requiring diverse airline service. Activity at ORD will continue to be served by a broad base of airlines; with the two hubbing airlines continuing to dominate in passenger and operations market share.
- The demand for air service in the Chicago Region will continue to be predominantly served through ORD, particularly for international air traffic and nonstop travel to the area's top 50 O&D markets. Midway Airport will continue to serve the Chicago Region as a low-cost alternative. No new airports within the Chicago Region will attract demand away from ORD.
- Airline consolidation/mergers or bankruptcies that may occur during the projection period are not likely to negatively impact passenger activity levels at the Airport, although they may affect airline's operating patterns and the activity profiles associated with ORD's demand volumes. New airline alliances, should they develop, will be restricted to code sharing and joint frequent flyer programs, and should not reduce airline competition at the Airport.
- The price of aviation fuel has steadily increased in recent years, requiring some passenger airlines to implement a surcharge to their pricing structure. However, fuel prices are not anticipated to negatively impact air travel demand in the long term due to competitive market pressures.

- Economic disturbances will occur in the projection period causing year-to-year traffic variations; however, a long-term increase in nationwide traffic is expected to occur.

It is anticipated that a constrained demand analysis will be needed for the ongoing environmental analysis, whereby ORD's processing capacity is modeled given the existing airfield or a variation of the existing airfield with some moderate enhancements, but not the airfield capacity improvements included in the OMP. This constrained scenario may also include changes in the Airport's or the airlines' operating characteristics (e.g., the de-peaking daily schedules being implemented by some of the major airlines), alternate Airport utilizations patterns, and/or demand management strategies to maximize the volume of demand that ORD could accommodate, while recognizing that there would still be some unmet demand that could result in opportunity losses for the City and/or the region. However, this document only presents the methodology and results of the unconstrained demand analysis. The constrained demand assessment will be discussed and presented in a separate document, or as part of the Environmental Impact Statement (EIS) for the OMP.

The following section describes some of the factors that have historically affected the volume and sources of demand at major hubs like ORD and discuss some of the effects that the September 11, 2001 terrorist attacks, the U.S. economic slowdown, and the resulting airline bankruptcy filings may have on the Airport's demand. This section is followed by the identification of the forecasts adopted for the OMP's unconstrained demand analysis and the associated forecast horizon.

5.1 Factors Affecting Airport Activity and Demand Profiles

The aviation industry is currently undergoing what many consider the most significant metamorphosis since deregulation. While many attribute the September 11, 2001 terrorist attacks as the primary cause for these changes, the reality is that the abrupt decrease in demand caused by these tragic events and the more gradual recovery that has followed have only further exposed and amplified the financial challenges that were already evident in the airline industry prior to September 11, 2001. Coupled with an economic recession that has affected nearly all industries and has brought along more modest demand for air travel (particularly leisure travel) and price sensitivity among travelers, the need for an overhaul to their cost structure became evident to most airlines, and for some, has clearly become crucial for their survival.

Air service demand is significantly related to economic conditions, and as such, is subject to the cyclical fluctuations that arise from changes in economic conditions. Demand is also related to other factors that affect how individuals make travel decisions given service availability and air-fare options. Historical patterns throughout the nation show that passenger demand typically grows faster than the Gross Domestic Product (GDP). In some mature markets, demand tends to grow at the same rate as the GDP while demand in less-developed markets grows faster than the GDP.

It appears that the U.S. economy is already on its way to recovery, even though there is some apprehension due to the uncertainty regarding the potential war with Iraq and the ongoing war on terrorism that has been ongoing since the last quarter of 2001. As such, while the U.S. economic recovery has begun, it is occurring at a sluggish pace. Economists are predicting real GDP growth in the range of 3.0 to 3.5 percent for 2003 and the near-term future. In addition, economists consider that the possibility of a double-dip recession (i.e., whereby the economy falls back into recession after a short recovery period) remains low. Some potential causes that could lead to a double-dip recession include:

- A drop in the stock market to a level at which wealth effect causes a significant reduction in general household spending,
- Consumer spending may eventually slow down after demands for durable goods are largely satisfied,
- The potential war with Iraq could sharply increase the cost for crude oil, thus triggering a recession, and
- Another terrorist attack may disrupt consumer and business confidence, thus prolonging the recessionary period.

Aside from the initial indications that a U.S. economic recovery is underway, air travel demand continues to be weak. While increases in GDP and corporate profits will strengthen demand, it is not likely that the past correlation between demand and GDP or corporate profits will be as strong. Some of the effects resulting from the new security mandates coupled with consumer price sensitivity will contribute to the looser correlation, at least in the short-term future.

It is generally accepted that stability and growth in the aviation industry is highly dependent on a system of aviation security that permits the efficient, convenient, and economic throughput of passengers and cargo. The co-called "hassle factor" associated with the passenger and baggage security screening procedures instituted by the federal government after the September 11, 2001 terrorist attacks has been cited as one cause for the lag in the resumption of business travel and for the diversion of short-haul travel to ground transportation modes. In addition, the federal government mandated that airlines take certain security measures (e.g., reinforcement of cockpit cabin doors), the costs of which were not reimbursed. Similarly, the cost of war risk and terror insurance have increased substantially for airlines.

As mentioned above, price sensitivity will also have an effect on air travel, at least in the near future. Leisure air travel has been growing more rapidly than business air travel over the last decade. Leisure demand is generally regarded as price elastic/sensitive, while business demand is regarded as price inelastic/insensitive. However, business travelers have begun demanding a new airline pricing structure, one that results in higher value through a reduction in cost. Some airlines have already responded to this demand (e.g., United's, American's, and Delta's pricing policies for same day flight sales). As such, aggregate passenger demand (i.e., leisure and business travelers combined) is becoming increasingly price sensitive.

Other industry patterns and trends that have in the past affected air travel demand (and are expected to continue affecting demand at an equal or greater degree) and their associated characteristics are discussed below.

5.1.1 Airline Cost Structure³

An airline's costs define the limit of how low it can profitably price its services. High costs along with sluggish demand and over-capacity were cited as the underlying causes of the fare wars and the unprecedented financial losses of airlines during the early 1990's. At that time, cost control rather than revenue growth was viewed as the strategic necessity for corporate survival. However, since fixed costs represent a large portion of airline costs, and most variable costs, such as labor and fuel, are difficult to project and control, this corporate vision proved elusive for most established airlines, which adopted yield management strategies as an alternative.

³ Sources of Reference: The John F. Brown Company and Ricondo & Associates, Inc.

Similar problems of sluggish demand, over-capacity, and high costs reside in the airline industry today. Once again, cost reduction has become the corporate mission. However, this time, the need for cost reduction goes well beyond the realization that reduced costs are needed to achieve profitability, cost reduction in our current environment is a must for many airlines' survival.

Airlines face their principal cost challenges in labor, fuel, and debt. The largest single item of expense and the greatest determinant of cost differentials among airlines is labor cost. Pay raises establish a higher fixed cost base, which is difficult to reverse during adverse times. Pay raises are typically a product of bargaining agreements.

In 2000, United was seeking to acquire U.S. Airways for \$4.3 billion. To express their dismay for this acquisition, United's pilots engaged in a "work-to-rule" action that forced delays and cancellations of United's flights during the summer of 2000. This slowdown harmed the airline significantly. To gain pilot support for the acquisition, United agreed to a 28 percent increase in pilot salaries that took effect on October 2000. In 2001, Delta's pilots disputed and won the same increase granted to the United's pilots, plus one percent.

To worsen its cost structure further, United later agreed to significant wage increases for its mechanics and ramp workers. United filed for an 18-month reorganization under Chapter 11 of the Bankruptcy Code on December 9, 2002. According to agreements it made to a coalition of banks led by Chicago-based Bank One Corporation to obtain \$1.5 billion in financing to keep operating, United must return to break-even cash flow by October 2003 and record a cash surplus of \$112 million by the end of November 2003. Thus, the airline is now seeking wage and work rule concessions from its pilots and mechanics.

Following the cost re-structuring by United and US Airways following their Chapter 11 bankruptcy filings, as well as the cost cutting initiatives that are being formulated and implemented by most of the other major airlines, it is anticipated that airlines will continue to seek lower unit costs through more efficient business operations. Some of these efficiency-seeking initiatives include the more intense utilization of aircraft, the abandonment of low profitability service routes, more extensive use of automation (e.g. self-service ticket counter kiosks), greater reliance on internet sales, and the de-peak of daily flight schedules, such as those implemented by American and Delta, at major hubs like ORD, Dallas-Ft. Worth International Airport, Miami International Airport, and Atlanta International Airport.

5.1.2 Airline Revenue Structure⁴

In response to passenger demand and the total supply of seats available to serve that demand, airlines seek a balance of yield and load factor that maximizes revenues. Prior to September 11, 2001, some airlines like American and United would orient their pricing strategies more to yield than load factors, and would focus their resources on business travelers in high-density city-pair markets. It was their ability to attract and retain travelers willing to pay a revenue premium for their service that had enabled these airlines to offset their higher unit costs. The high-frequency, high-value business travelers represented a relatively low percentage of total passengers, but a disproportionately high level of fare revenues for many airlines.

⁴ Sources of Reference: The John F. Brown Company and Ricondo & Associates, Inc.

Historically, airlines serving the business market have confronted the problem of excess capacity relative to the requirements of the business market. Due to competitive airlines' attempt to satisfy the preferences of business travelers for high-frequency nonstop service, the impracticality of trying to adjust fleet size in response to short-term variations in demand, and limitations in aircraft equipment types, airlines have in the past produced more capacity than they can sell to the business market. However, increased competition and fragmentation of markets will most likely contribute to airline efforts to better balance capacity and demand in the future.

While the larger aircraft fleets offer some economies of scale in terms of lower costs per available seat mile, they do not ensure profits unless the revenues per available seat mile are higher. By contrast, smaller aircraft offer lower trip costs and a better ability to manage risk. Another service strategy that has become more prominent since September 11, 2001 is the use of regional aircraft for purposes of reducing excess capacity without removing flight frequencies (e.g., United's increased reliance on the United Express network to regional markets and/or markets previously served by small narrow body aircraft within a 1,300 nautical mile range).

5.1.3 Trends in Commercial Jet Aircraft

One of the more prevalent, yet often overlooked trends in the aviation industry within the last 20 years has been the evolution of commercial jet aircraft into fuel-efficient jetliners that offer airlines and passengers greater range, seating capacity, comfort, and significantly improved operating economics. The emergence of this new fleet of aircraft coupled with federal mandates for the phase-out of the noisier Stage 2 aircraft have resulted in a re-characterization of the commercial aircraft fleet in operation today and those emerging in the years to come.

In the 1970's, airplane limitations constrained airline business strategies and route structures. Narrow body operations were represented by B-737, DC-9, and B-727 aircraft for short-to-mid range routes. Longer-range routes were often accommodated on aging B-707 and DC-8 aircraft. Wide body operations were typically served on either B-747, DC-10, L-1011, or A300 aircraft. Today, airplane features are considerably different. Jetliners are more fuel-efficient, offer varying seating configurations, and possess greater range capabilities than in the past. In fact, certain B-757, new large generation B-737's, and Airbus fleets like the A321, when configured with specific power plants can fly transcontinental nonstops that were previously served by wide body aircraft or jumbo jets.

Similarly, the performance, capacities, and economics of airplanes twenty years ago dictated the business strategies of transatlantic carriers. They could either operate aircraft like the B-707 and DC-8 for markets with passenger densities that were less than 200 or B-747, DC-10, and L-1011 aircraft for markets requiring more than 200 seats. With lower seat-mile costs and newer technology, the wide body aircraft transcended to become the preferred fleet forcing airlines to adopt a business strategy focused on high capacity flights linking just a few transatlantic gateways. The large, passenger-capacity aircraft of the future, such as the B-777 and the A380, coupled with the new generation B-737, B757-300 as well as the A330, A340, and B-767 aircraft, will further enhance transcontinental and international air service and compliment the B747-400 fleet that has historically governed these markets.

Today, an ongoing shift towards smaller, wide-ranging, highly fuel-efficient airplanes is fundamentally transforming transatlantic air travel. Introduced in the 1980's, the B-767 and A310 have freed airlines to pursue flexible business strategies that offer passengers greater value. They

save time and money because their travel is more direct and they have a greater selection of frequencies because today's traffic is divided among a greater number of smaller-capacity jets. With the availability of a third size of B-767, and with B-757's also entering the transatlantic service, this transformation promises to continue. Since September 11, 2001, we have begun to see additional trends emerge. The regional aircraft, which until recently (before 2001) was considered the ultimate replacement for the turboprop, commuter fleets, is actually becoming a substitute for some of the smaller narrow body fleets, due in great part to their growing stage length capacities. The regional jet now offers an airline the opportunity to better balance demand and capacity, for smaller demand markets, without reducing frequencies from their flight schedules.

The September 11, 2001 terrorist attacks and the airlines quest for financial stability have more abruptly solidified these emerging trends. Many airlines have deployed their narrow body fleets for service to origin and destination spoke markets. Alternately, they have also relied on their regional service partners for service to these markets. The wide body and jumbo body fleets have been allocated primarily to their system hubs and to serve high demand transcontinental or international markets. An example of this has been United's retrieval of its entire B777 fleet from its Miami station in the last quarter of 2002. Markets previously served by these jumbo body aircraft are now being served by B767 fleets and smaller, narrow body aircraft. This could be viewed as significant change if one considers the fact that in the late 1990's, United used some of its B777 fleet to serve charter flights between Miami and Havana, Cuba.

5.1.4 Regional Aircraft and Service

Regional aircraft are smaller, less expensive jets capable of flying longer distances than traditional propeller-based commuter aircraft. As a result, the demand for these aircraft has escalated in recent years. Regional jets fly routes averaging 400 nautical miles, with some extending up to beyond 1,300 nautical miles. These regional jets are enabling airlines to carve out new niches in the travel industry and provide a better balance between capacity and demand without sacrificing flight frequencies.

The demand for regional jets has been on the rise for the better part of the decade. During this same period, the demand for turboprop aircraft has been on a downward trend. The regional jet adds a degree of sophistication and level of service for the passenger and reduces air travel time when compared to commuter aircraft serving the same market. However, one of the more noteworthy effects of the regional jet has been its ability to serve as an operating unit within the transition area that has historically existed between the commuter aircraft and the larger jets. The regional jet offers a means for servicing markets that are within the range capabilities of commuter aircraft as well as some of the smaller jets for markets with densities ranging between 50 and 100 passengers. As a result, the regional jet provides the ability to serve not only the close-range markets, but also some of the regional markets that were typically served by the DC-9, F28, F100, older B737-series aircraft and even the once popular B-727 aircraft.

As airlines continue to seek opportunities to reduce their operating costs without sacrificing passenger convenience, safety, or security, it is very likely that airlines like American, United, Delta, and Continental will further intensify their efforts to incorporate regional jets into many domestic markets within their route structure. Alternately, many of these carriers will rely more heavily on their commuter/regional service partners (e.g. American Eagle, United Express, CO Express, Comair) to either provide additional frequencies or assume existing frequencies to current and future markets.

Current aircraft order logs maintained by Canadair and Embraer show a continuation of orders for regional jets with seating capacities ranging between 33 and 70 seats. At connecting hubs like ORD, the continued presence and growth of regional jets is already evident as hubbing air lines have strived to maintain flight frequencies to major cities and lower demand markets by utilizing these more efficient regional fleets and funneling more traffic through their existing connecting hub network.

5.2 Adopted Forecast Sources

As previously mentioned, the aviation demand analysis for the OMP comprised the utilization of previously developed forecasts to develop derivative aviation activity profiles and future daily demand scenarios (established in the form of design day activity schedules) for ORD.

To accomplish these objectives, the 2001 FAA Terminal Area Forecasts (TAF's) were used as the primary forecast source for quantifying future aviation activity for ORD. In addition to the FAA TAF's, historical activity patterns and traffic statistics were used for purposes of:

- Establishing future peaking demand patterns at ORD;
- Understanding the demand profiles that formed the basis for other ongoing airfield and terminal improvements at ORD;
- Assessing historical patterns and projected sources and volumes of demand;
- Assimilate recent historical trends (i.e., 1998-2002)

The 2001 FAA TAF's represent the official demand forecasts published by the FAA for ORD at the time of this analysis. The 2001 FAA TAF's were prepared in the Spring and Summer of 2001, prior to the September 11, 2001 terrorist attacks and before the effects of the U.S. economic recession were as defined as they are today. For the past year, the FAA has issued draft iterations of 2002 TAF's that, as of February 2003, remain as work-in-progress demand forecasts. In general, the draft iterations of the 2002 TAF's reflect a decrease in passenger activity in fiscal year 2002, with a slow recovery period continuing through fiscal year 2004, followed by the normalizing of demand activity to reflect growth rates that resemble those reflected in the 2001 TAF's. The updated TAF's also reflect some of the operational changes that have been adopted by the airlines during the past 18 months (as previously discussed in the prior section).

Following a review of the 2001 TAF's and the draft 2002 TAF's issued by the FAA thus far, the City, FAA, and planning consulting team mutually agreed in the utilization of the 2001 TAF for the OMP planning analysis as well as the ongoing Environmental Impact Statement (EIS). A copy of the FAA concurrence letter is included in **Appendix A**.

Agreement on the utilization of the 2001 TAF's was based on the fact that these are the most current official FAA forecasts for ORD and the consensus that these demand projections are still valid for long-range planning purposes. Even if the industry continues to consolidate, as many predicted even prior to September 11, 2001, and near-term and long-term airline operating characteristics reflect a more efficient balance between fleet capacity and seat demand, the unconstrained demand projections forecast for ORD by the FAA continue to represent an adequate quantification of future aviation activity for the 10 to 20-year horizon.

The FAA's concurrence with the utilization of the 2001 TAF's is contingent on the mutual agreement that other TAF's issued during the EIS will be reviewed and evaluated against the 2001 TAF

projections, and addressed accordingly. This may require conducting sensitivity analyses to assess the different activity volumes and/or demand patterns associated with future TAF projections published during the EIS study.

As appropriate, other industry forecasts such as the FAA's Long Range Forecasts, the Airbus Global Market Forecasts (2000-2019) and the Boeing Market Outlook Forecasts (2001) were used as reference documents to confirm some of the demand profiles established for ORD.

5.3 Summary of 2001 FAA TAF Projections

Annual projections of future aviation activity were obtained from the FAA's Terminal Area Forecasts officially published in 2001 for ORD. These FAA forecasts, which provide annual projections of passenger enplanements and total aircraft operations through fiscal year 2015, were converted to calendar year (CY) projections and extrapolated through the year 2022 to produce a twenty-year demand evaluation period. The extrapolated projections of activity for CY2015 and beyond were derived using a trend analysis of the forecast activity from CY2002 through CY2014 (the forecast horizon included in the published 2001 TAF's).

Tables V-1 and V-2 summarize the 2001 TAF projections in fiscal years (as published by the FAA) and in calendar years. These projections are also graphically depicted in **Exhibits V-1 and V-2**. As shown, the 2001 TAF projections reflect passenger enplanements at ORD would grow to approximately 48.6 million in calendar year 2014. The extrapolation of the 2001 TAF's as described above resulted in annual passenger enplanements reaching approximately 57.4 million in the year 2022. Similarly, the 2001 TAF's projected growth in total annual aircraft operations reaching 1.1 million operations in calendar year 2014. The extrapolation of the TAF projections resulted in 1.2 million operations in calendar year 2022.

VI. Derivative Demand Profiles – Passenger Enplanements

The total annual enplanement projections included in the 2001 TAF's have been further categorized into domestic originating enplanements, domestic connecting enplanements, international originating enplanements, and international connecting enplanements. In addition, these annual demand forecasts have been converted to peak month and Peak Month Average Day (PMAD) demand projections using historical relationships between annual and peak month demand at ORD. The passenger enplanement projections derived from the 2001 TAF's are summarized in **Table VI-1**.

The derivation of annual, peak month, and PMAD estimates of domestic and international passenger demand, as well as the derivation of originating versus connecting passenger traffic is discussed in the following sections.

The 2001 TAF annual passenger enplanement projections were segregated into domestic and international activity. Passenger activity and aircraft operations to/from Canadian destinations were included within the domestic activity. The 1998 Chicago Airport System Forecasts were reviewed for purposes of understanding the growth patterns projected for domestic and international passenger traffic at ORD during the 1998-2012 forecast horizon considered in the System Forecasts. In particular, the 1998 through 2001 projections were compared with the actual domestic/international passenger splits at ORD experienced from 1997 through 2001.

Table V-1**2001 FAA Terminal Area Forecasts for O'Hare International Airport - Passenger Enplanements**

Year	2001 TAF Enplanements (in FY)		2001 TAF Enplanements (in CY)		
	Historical ¹	Projected	Historical ¹	Projected ³	Extrapolated ⁴
1990	29,419,002		29,419,002		
1991	29,376,349		29,376,349		
1992	31,655,074		31,655,074		
1993	31,983,998		31,983,998		
1994	32,718,725		32,718,725		
1995	32,861,460		32,861,460		
1996	34,067,885		34,067,885		
1997	34,774,114		34,774,114		
1998	35,758,810		35,758,810		
1999	35,946,964		35,946,964		
2000	35,700,525		35,700,525		
2001	33,310,203	34,153,190 ²	33,310,203		
2002		35,284,393		35,556,730	
2003		36,373,739		36,646,076	
2004		37,463,086		37,735,423	
2005		38,552,434		38,824,771	
2006		39,641,781		39,914,118	
2007		40,731,129		41,003,466	
2008		41,820,477		42,092,814	
2009		42,909,825		43,182,162	
2010		43,999,173		44,271,510	
2011		45,088,521		45,360,858	
2012		46,177,868		46,450,205	
2013		47,267,216		47,539,553	
2014		48,356,563		48,628,901	
2015		49,445,913			49,719,645
2016		<i>50,540,840</i>			50,813,438
2017		<i>51,631,234</i>			51,903,832
2018		<i>52,721,628</i>			52,994,226
2019		<i>53,812,022</i>			54,084,620
2020		<i>54,902,416</i>			55,175,014
2021		<i>55,992,810</i>			56,265,408
2022		<i>57,083,204</i>			57,355,802

Notes:

¹ Historic Activity shown in Calendar Years and obtained from the City of Chicago's Department of Aviation Management Records.² Represents FAA TAF projections for FY2001.³ Represents FAA TAF projections converted to calendar years by Ricondo & Associates, Inc..⁴ Represents FAA TAF projections extrapolated by Ricondo & Associates, Inc..

Italic text represents extrapolated TAF projections.

Sources: City of Chicago Airport Activity Statistics; FAA Terminal Area Forecasts; Ricondo & Associates, Inc.

Prepared by: Ricondo & Associates, Inc., February 2003

Table V-2**2001 FAA Terminal Area Forecasts for O'Hare International Airport - Total Aircraft Operations**

Year	2001 TAF Total Aircraft Operations (in FY)		2001 TAF Total Aircraft Operations (in CY)		
	Historical ¹	Projected	Historical ¹	Projected ³	Extrapolated ⁴
1990	810,865		810,865		
1991	813,896		813,896		
1992	841,193		841,193		
1993	859,208		859,208		
1994	883,062		883,062		
1995	900,279		900,279		
1996	909,593		909,593		
1997	883,761		883,761		
1998	896,104		896,104		
1999	884,783		884,783		
2000	908,989		908,989		
2001	911,917	923,435 ²	911,917	911,917	
2002		929,097		932,542	
2003		942,878		946,324	
2004		956,661		960,107	
2005		970,444		973,890	
2006		984,227		987,673	
2007		998,010		1,001,456	
2008		1,011,793		1,015,238	
2009		1,025,574		1,029,020	
2010		1,039,357		1,042,803	
2011		1,053,140		1,056,586	
2012		1,066,923		1,070,369	
2013		1,080,706		1,084,152	
2014		1,094,489		1,097,935	
2015		1,108,272			1,111,447
2016		<i>1,120,971</i>			1,124,366
2017		<i>1,134,551</i>			1,137,946
2018		<i>1,148,131</i>			1,151,525
2019		<i>1,161,710</i>			1,165,105
2020		<i>1,175,290</i>			1,178,685
2021		<i>1,188,870</i>			1,192,265
2022		<i>1,202,449</i>			1,205,844

Notes:

¹ Historic Activity shown in Calendar Years and obtained from the City of Chicago's Department of Aviation Management Records.

² Represents FAA TAF projections for FY2001.

³ Represents FAA TAF projections converted to calendar years by Ricondo & Associates, Inc..

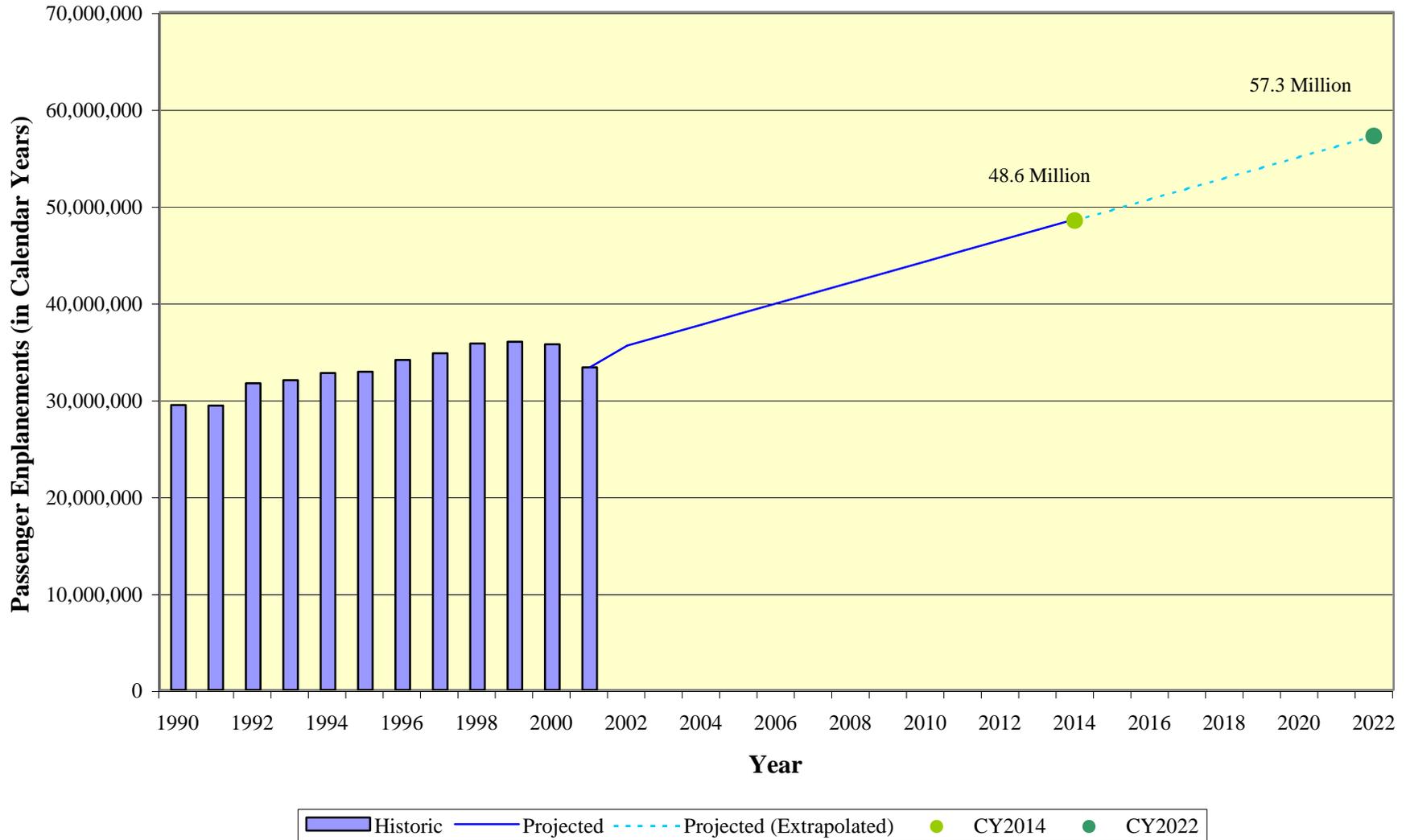
⁴ Represents FAA TAF projections extrapolated by Ricondo & Associates, Inc..

Italic text represents extrapolated TAF projections.

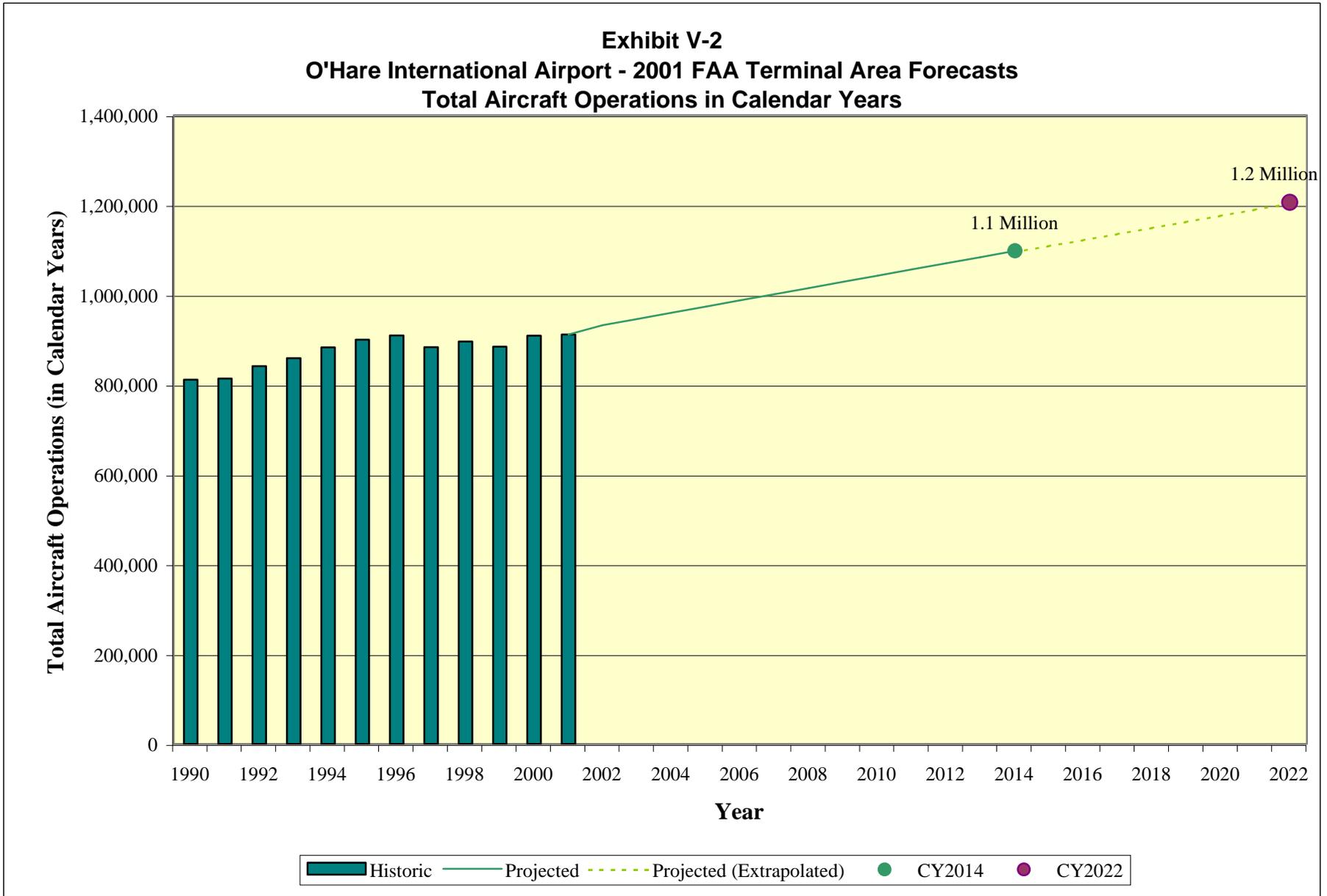
Sources: City of Chicago Airport Activity Statistics; FAA Terminal Area Forecasts; Ricondo & Associates, Inc.

Prepared by: Ricondo & Associates, Inc., February 2003

Exhibit V-1
O'Hare International Airport - 2001 FAA Terminal Area Forecasts
Passenger Enplanements in Calendar Years



Sources: City of Chicago Airport Traffic Statistics (Historic); 2001 FAA Terminal Area Forecasts; Ricondo Associates, Inc.



Sources: City of Chicago Airport Traffic Statistics (Historic); 2001 FAA Terminal Area Forecasts; Ricondo & Associates, Inc.

Table VI-1

Passenger Enplanement Projections - Summary

		DOMESTIC					INTERNATIONAL						
Year	O&D	Total Domestic Connecting	Total Annual Domestic ¹	Peak Month	PMAD	O&D	Domestic to Int'l Connecting	Total Annual International ²	Peak Month	PMAD	Share of Total Enplanements	Total Enplanements	
Actual	2001	12,366,025	17,122,735	29,488,760	3,061,711	98,765	1,528,577	2,292,866	3,821,443	401,013	12,936	11.5%	33,310,203
	2002	14,772,526	16,330,854	31,103,380	2,937,957	94,773	1,781,340	2,672,010	4,453,349	531,548	17,147	12.5%	35,556,730
	2003	15,226,477	16,698,257	31,924,734	3,015,540	97,275	1,888,537	2,832,805	4,721,342	563,536	18,179	12.9%	36,646,076
	2004	15,668,941	17,046,304	32,715,245	3,090,210	99,684	2,008,071	3,012,107	5,020,178	599,205	19,329	13.3%	37,735,423
	2005	16,110,167	17,386,439	33,496,606	3,164,016	102,065	2,131,266	3,196,899	5,328,165	635,966	20,515	13.7%	38,824,771
	2006	16,550,098	17,718,718	34,268,816	3,236,957	104,418	2,258,121	3,387,181	5,645,302	673,819	21,736	14.1%	39,914,118
	2007	16,988,681	18,043,195	35,031,876	3,309,034	106,743	2,388,636	3,582,954	5,971,590	712,764	22,992	14.6%	41,003,466
	2008	17,424,745	18,358,750	35,783,495	3,380,030	109,033	2,523,728	3,785,591	6,309,319	753,075	24,293	15.0%	42,092,814
	2009	17,864,655	18,672,176	36,536,831	3,451,189	111,329	2,658,132	3,987,199	6,645,331	793,182	25,587	15.4%	43,182,162
	2010	18,303,300	18,978,152	37,281,453	3,521,524	113,598	2,796,023	4,194,034	6,990,057	834,328	26,914	15.8%	44,271,510
	2011	18,740,628	19,276,731	38,017,359	3,591,036	115,840	2,937,399	4,406,099	7,343,499	876,514	28,275	16.2%	45,360,858
	2012	19,176,585	19,567,965	38,744,550	3,659,725	118,056	3,082,262	4,623,393	7,705,655	919,741	29,669	16.6%	46,450,205
	2013	19,579,254	19,978,852	39,558,106	3,736,572	120,535	3,192,579	4,788,868	7,981,446	952,659	30,731	16.8%	47,539,553
	2014	19,979,766	20,387,539	40,367,305	3,813,007	123,000	3,304,638	4,956,957	8,261,595	986,098	31,810	17.0%	48,628,901
	2015	20,378,694	20,794,609	41,173,303	3,889,140	125,456	3,391,829	5,154,512	8,546,342	1,020,085	32,906	17.2%	49,719,645
	2016	20,776,709	21,200,747	41,977,456	3,965,098	127,906	3,479,168	5,356,814	8,835,982	1,054,656	34,021	17.4%	50,813,438
	2017	21,171,173	21,603,261	42,774,434	4,040,379	130,335	3,566,171	5,563,227	9,129,399	1,089,678	35,151	17.6%	51,903,832
	2018	21,563,477	22,003,572	43,567,049	4,115,248	132,750	3,653,031	5,774,146	9,427,177	1,125,221	36,297	17.8%	52,994,226
	2019	21,953,623	22,401,680	44,355,303	4,189,704	135,152	3,739,706	5,989,611	9,729,317	1,161,284	37,461	18.0%	54,084,620
	2020	22,341,610	22,797,586	45,139,195	4,263,749	137,540	3,826,156	6,209,663	10,035,819	1,197,868	38,641	18.2%	55,175,014
	2021	22,727,438	23,191,288	45,918,726	4,337,382	139,916	3,912,339	6,434,343	10,346,682	1,234,972	39,838	18.4%	56,265,408
	2022	23,111,107	23,582,788	46,693,895	4,410,603	142,278	3,998,215	6,663,692	10,661,907	1,272,597	41,052	18.6%	57,355,802

Notes:
 1 Includes Canadian traffic
 2 Excluded Canadian traffic
 N/A Not Available within the June 2001 document

Sources: 2001 FAA Terminal Area Forecasts; U.S. DOT Origin-Destination Passenger Survey; Ricondo & Associates, Inc.
 Prepared by: Ricondo & Associates, Inc., February 2003

Recent activity trends at the Airport confirm the domestic/international activity distributions identified in the 1998 System Forecasts through 2002. The 1998 Forecasts estimate that domestic activity will constitute approximately 85.4 percent and 83.4 percent of the Airport's total enplaned passenger volumes in the years 2007 and 2012, respectively. Similarly, the 1998 Forecasts estimate that international activity in 2007 and 2012 will represent approximately 14.6 percent and 16.6 percent, respectively, of the Airport's total enplaned passenger volumes. These projected patterns (which represent an average annual decrease in the share of domestic passenger enplanements of 0.4 percent points and an average annual increase in the share of international passenger enplanements by an equal number of percent points) indicate that ORD's international activity will continue to grow at a greater rate than the Airport's domestic traffic during the near to mid-term future. These projected patterns reflect the trends in passenger growth at ORD in the last five years. Therefore, the growth patterns projected in the 1998 Forecasts and experienced at the Airport since 1998 (i.e., domestic activity share decreasing at an average annual rate of 0.4 percent points and international activity share growing at 0.4 percent points) are assumed to continue through 2012. Beyond 2012, a continuation of these patterns is assumed, but at a smaller magnitude. From 2012 through 2022, domestic activity share is estimated to continue decreasing at an average annual rate of 0.2 percent points. International activity share is assumed to continue growing at an average annual rate of 0.2 percent points.

Table VI-2 summarizes the annual domestic and international passenger projections derived from the 2001 TAF's. As shown, these demand characteristics result in a domestic/international split of 83.4 percent/16.6 percent for 2012 and 81.4 percent/18.6 percent for 2022. These traffic splits translate to 38.7 million annual domestic passengers and 7.7 million annual international passengers in 2012 and 46.7 million annual domestic passengers and 10.7 million annual international passengers in 2022. The 2022 passenger volumes result in an average annual growth of 2.2 percent in domestic passenger traffic and 5.0 percent in international passenger traffic from 2001 through 2022.

6.1 Origin and Destination (O&D)/Connecting Passenger Splits

The annual domestic and international passenger projections presented above were further categorized into O&D and connecting passenger volumes. The derivation of total domestic and international passenger traffic into O&D and connecting passenger projections was performed using the following methodology:

- First, international domestic to international connecting passenger activity was derived assuming that 60 percent of the total international passenger traffic comprises passengers connecting from international flights to domestic flights from 2001 through 2014 (i.e., the forecast horizon for the 2001 TAF prior to being extrapolated). This share of connecting activity represents actual connecting traffic for ORD for calendar year 2000, as reported in the U.S. DOT International Origin-Destination Passenger Survey, obtained from BACK Aviation Solutions. From 2015 through 2022, it was assumed that international to domestic connecting traffic would increase steadily from 60 percent to 65 percent. This growth in connecting activity would result from an unconstrained operating environment coupled with increased hubbing operations by domestic/international carrier alliances.
- International O&D passenger activity was estimated by subtracting total international enplanements from the estimated share of domestic to international connecting enplanements.

Table VI-2

Domestic/International Passenger Splits

Passenger Enplanements ¹ - OMP Demand Analyses using the 2001 TAF's						
Calendar Year	Domestic	% of Total	International	% of Total	Total	
Historic²	1990	27,866,330	94.7%	1,552,672	5.3%	29,419,002
	1991	27,826,320	94.7%	1,550,029	5.3%	29,376,349
	1992	29,754,331	94.0%	1,900,743	6.0%	31,655,074
	1993	29,909,993	93.5%	2,074,005	6.5%	31,983,998
	1994	30,541,648	93.3%	2,177,077	6.7%	32,718,725
	1995	30,496,053	92.8%	2,365,407	7.2%	32,861,460
	1996	31,479,170	92.4%	2,588,715	7.6%	34,067,885
	1997	31,858,776	91.6%	2,915,338	8.4%	34,774,114
	1998	32,455,965	90.8%	3,302,845	9.2%	35,758,810
	1999	32,213,452	89.6%	3,733,512	10.4%	35,946,964
	2000	31,652,950	88.7%	4,047,575	11.3%	35,700,525
2001	29,488,760	88.5%	3,821,443	11.5%	33,310,203	
Projected³	2002	31,103,380	87.5%	4,453,349	12.5%	35,556,730
	2003	31,924,734	87.1%	4,721,342	12.9%	36,646,076
	2004	32,715,245	86.7%	5,020,178	13.3%	37,735,423
	2005	33,496,606	86.3%	5,328,165	13.7%	38,824,771
	2006	34,268,816	85.9%	5,645,302	14.1%	39,914,118
	2007	35,031,876	85.4%	5,971,590	14.6%	41,003,466
	2008	35,783,495	85.0%	6,309,319	15.0%	42,092,814
	2009	36,536,831	84.6%	6,645,331	15.4%	43,182,162
	2010	37,281,453	84.2%	6,990,057	15.8%	44,271,510
	2011	38,017,359	83.8%	7,343,499	16.2%	45,360,858
	2012	38,744,550	83.4%	7,705,655	16.6%	46,450,205
	2013	39,558,106	83.2%	7,981,446	16.8%	47,539,553
	2014	40,367,305	83.0%	8,261,595	17.0%	48,628,901
	Projected by Extrapolating the 2001 TAF's	2015	41,173,303	82.8%	8,546,342	17.2%
2016		41,977,456	82.6%	8,835,982	17.4%	50,813,438
2017		42,774,434	82.4%	9,129,399	17.6%	51,903,832
2018		43,567,049	82.2%	9,427,177	17.8%	52,994,226
2019		44,355,303	82.0%	9,729,317	18.0%	54,084,620
2020		45,139,195	81.8%	10,035,819	18.2%	55,175,014
2021		45,918,726	81.6%	10,346,682	18.4%	56,265,408
2022		46,693,895	81.4%	10,661,907	18.6%	57,355,802

Average Annual Growth Rates:

1990-2001	0.5%	8.5%
2001-2007	2.9%	7.7%
2007-2014	2.0%	4.7%
2014-2022	1.8%	3.2%
2001-2022	2.2%	5.0%

Notes:

- 1 Includes Canadian activity as domestic traffic. TAF Projections have been converted from fiscal year to calendar year projections.
- 2 As obtained from the City of Chicago's Department of Aviation Management Records (adjusted to reflect Canadian activity as domestic traffic).
- 3 Total Passenger projections (from CY 2002-2014) obtained from 2001 Terminal Area Forecasts. Projections beyond CY2014 (shown in blue) were extrapolated by Ricondo & Associates, Inc.
 Domestic/International Splits: Chicago Airport System Forecast, June 1998
 Domestic/International Splits: Projected or extrapolated by R&A
- 4 Commuter/Regional enplanements have been included within the domestic traffic volumes.

Sources: City of Chicago Airport Traffic Statistics; 1998 Chicago Airport System Forecasts; 2001 FAA Terminal Area Forecasts; Ricondo & Associates, Inc.

Prepared by: Ricondo & Associates, Inc., February 2003

- It was assumed that the domestic to international connecting passenger percentage is the same as the international to domestic connecting passenger percentage, thus resulting in the derivation of international to domestic connecting enplanements.
- Total domestic connecting activity is assumed to decrease gradually from 51.7 percent in 2001 to 50.5 percent (estimated to occur on or near 2012), and then remain constant at that level through 2022. This decreasing trend in domestic connecting traffic is indicative of anticipated growth in O&D domestic passenger traffic resulting from the projected growth in population and the strength of the economy in the region in relation to the nation. Using these shares of total domestic connecting activity, estimates of future domestic connecting passengers were derived.
- Estimates of domestic to domestic connecting enplanements were derived by subtracting the projections of international to domestic connecting enplanements from the total projected domestic connecting enplanements. ORD's geographic location will be a primary driver of domestic to domestic connecting traffic.
- Lastly, domestic O&D enplanements were derived by subtracting domestic connecting enplanements from the total projected domestic enplanements.

Table VI-3 presents the detailed passenger projections (by domestic and international activity and further divided into O&D and connecting passengers), for ORD from 2001 through 2022. For reference purposes, the growth rates projected by the FAA in the Long Range Aerospace Forecasts are also included. As shown, the international growth rates projected for ORD are consistent with the FAA's international traffic growth projections through 2014. From 2014 through 2022, ORD's international passenger traffic is projected to grow at a smaller rate than projected for the nation by the FAA. Of ORD's total international enplanements, connecting traffic is projected to grow faster than the O&D traffic, thus reflecting increased hubbing operations domestic/international carrier alliances.

Similarly, total domestic traffic at ORD is projected to grow at a more modest level through 2022 in comparison to the FAA's projected national growth in domestic enplanements. In terms of total domestic passenger volumes, O&D traffic is still expected to constitute the majority of ORD's domestic passenger activity. However, the share of domestic connections is expected to represent a greater share of the total domestic passenger activity in comparison to 2001.

6.2 Peak Month and Peak Month Average Day (PMAD) Passengers

The 2001 TAF annual enplanement projections were also converted into peak month equivalents using historical traffic statistics collected by the City's Department of Aviation (DOA). Historical traffic statistics for the period 1990-2000 were used to derive the average percent of passenger traffic served in the peak month relative to the total annual passenger volumes. The share of peak month to annual passenger activity for 2001 was not considered given the skewed ratio produced by the sharp decrease in fourth quarter traffic due to the September 11, 2001 terrorist attacks.

For domestic passenger traffic, the peak month to annual relationship was established for each year, starting in 1990 and ending in 2000. The average share of peak month passenger to annual passenger for domestic activity is 9.4 percent for the 11-year period. This share was held constant through the

Table VI-3
Passenger Enplanements - Activity Profiles

DOMESTIC										INTERNATIONAL						
Year	O&D	Share of Total Domestic	Domestic to Domestic Connecting	International to Domestic Connecting	Total Domestic Connecting	Share of Total Domestic	Total Domestic ¹	Share of Total Enplanements	O&D	Share of Total International	Domestic to Int'l Connecting	Share of Total International	Total International ²	Share of Total Enplanements	Total Enplanements	
Actual 2001	12,366,025	41.9%	14,829,870	2,292,866	17,122,735	58.1%	29,488,760	88.5%	1,528,577	40.0%	2,292,866	60.0%	3,821,443	11.5%	33,310,203	
2002	14,772,526	47.5%	13,658,844	2,672,010	16,330,854	52.5%	31,103,380	87.5%	1,781,340	40.0%	2,672,010	60.0%	4,453,349	12.5%	35,556,730	
2003	15,226,477	47.7%	13,865,452	2,832,805	16,698,257	52.3%	31,924,734	87.1%	1,888,537	40.0%	2,832,805	60.0%	4,721,342	12.9%	36,646,076	
2004	15,668,941	47.9%	14,034,197	3,012,107	17,046,304	52.1%	32,715,245	86.7%	2,008,071	40.0%	3,012,107	60.0%	5,020,178	13.3%	37,735,423	
2005	16,110,167	48.1%	14,189,540	3,196,899	17,386,439	51.9%	33,496,606	86.3%	2,131,266	40.0%	3,196,899	60.0%	5,328,165	13.7%	38,824,771	
2006	16,550,098	48.3%	14,331,537	3,387,181	17,718,718	51.7%	34,268,816	85.9%	2,258,121	40.0%	3,387,181	60.0%	5,645,302	14.1%	39,914,118	
2007	16,988,681	48.5%	14,460,241	3,582,954	18,043,195	51.5%	35,031,876	85.4%	2,388,636	40.0%	3,582,954	60.0%	5,971,590	14.6%	41,003,466	
2008	17,424,745	48.7%	14,573,158	3,785,591	18,358,750	51.3%	35,783,495	85.0%	2,523,728	40.0%	3,785,591	60.0%	6,309,319	15.0%	42,092,814	
2009	17,864,655	48.9%	14,684,977	3,987,199	18,672,176	51.1%	36,536,831	84.6%	2,658,132	40.0%	3,987,199	60.0%	6,645,331	15.4%	43,182,162	
2010	18,303,300	49.1%	14,784,118	4,194,034	18,978,152	50.9%	37,281,453	84.2%	2,796,023	40.0%	4,194,034	60.0%	6,990,057	15.8%	44,271,510	
2011	18,740,628	49.3%	14,870,632	4,406,099	19,276,731	50.7%	38,017,359	83.8%	2,937,399	40.0%	4,406,099	60.0%	7,343,499	16.2%	45,360,858	
2012	19,176,585	49.5%	14,944,573	4,623,393	19,567,965	50.5%	38,744,550	83.4%	3,082,262	40.0%	4,623,393	60.0%	7,705,655	16.6%	46,450,205	
2013	19,579,254	49.5%	15,189,985	4,788,868	19,978,852	50.5%	39,558,106	83.2%	3,192,579	40.0%	4,788,868	60.0%	7,981,446	16.8%	47,539,553	
2014	19,979,766	49.5%	15,430,582	4,956,957	20,387,539	50.5%	40,367,305	83.0%	3,304,638	40.0%	4,956,957	60.0%	8,261,595	17.0%	48,628,901	
2015	20,378,694	49.5%	15,640,096	5,154,512	20,794,609	50.5%	41,173,303	82.8%	3,391,829	39.7%	5,154,512	60.3%	8,546,342	17.2%	49,719,645	
2016	20,776,709	49.5%	15,843,933	5,356,814	21,200,747	50.5%	41,977,456	82.6%	3,479,168	39.4%	5,356,814	60.6%	8,835,982	17.4%	50,813,438	
2017	21,171,173	49.5%	16,040,034	5,563,227	21,603,261	50.5%	42,774,434	82.4%	3,566,171	39.1%	5,563,227	60.9%	9,129,399	17.6%	51,903,832	
2018	21,563,477	49.5%	16,229,426	5,774,146	22,003,572	50.5%	43,567,049	82.2%	3,653,031	38.8%	5,774,146	61.3%	9,427,177	17.8%	52,994,226	
2019	21,953,623	49.5%	16,412,069	5,989,611	22,401,680	50.5%	44,355,303	82.0%	3,739,706	38.4%	5,989,611	61.6%	9,729,317	18.0%	54,084,620	
2020	22,341,610	49.5%	16,587,923	6,209,663	22,797,586	50.5%	45,139,195	81.8%	3,826,156	38.1%	6,209,663	61.9%	10,035,819	18.2%	55,175,014	
2021	22,727,438	49.5%	16,756,945	6,434,343	23,191,288	50.5%	45,918,726	81.6%	3,912,339	37.8%	6,434,343	62.2%	10,346,682	18.4%	56,265,408	
2022	23,111,107	49.5%	16,919,096	6,663,692	23,582,788	50.5%	46,693,895	81.4%	3,998,215	37.5%	6,663,692	62.5%	10,661,907	18.6%	57,355,802	
Average Annual Growth Rates																
2001-2014	3.8%		0.3%		1.4%		2.4%		6.1%		6.1%		6.1%		3.0%	
2014 - 2022	1.9%		1.2%		1.9%		1.9%		2.4%		3.8%		3.3%		2.1%	

Notes:
1 Includes Canadian traffic
2 Excluded Canadian traffic
N/A Not Available within the June 2001 document

Sources: 2001 FAA Terminal Area Forecasts; U.S. DOT Origin-Destination Passenger Survey; Ricondo & Associates, Inc.
Prepared by: Ricondo & Associates, Inc., February 2003

20-year demand analysis period and used to derive domestic peak month enplanement projections from 2002 through 2022.

For international passenger traffic, the average share of peak month passenger to annual passenger activity for the period beginning in 1996 and ending in 2000 was used. This five-year historical period represented less seasonal international traffic patterns and also reflected some of the more recent trends in international activity growth and traffic patterns at ORD. The average share of peak month to annual international passengers for this five-year period is 11.9 percent. This share was held constant through the 20-year demand analysis period and used to derive international peak month enplanement projections from 2002 through 2022.

On average, July and August have represented the peak months for domestic and international passenger activity at ORD since 1990. The only exception occurred in 2000, when international passenger activity peaked in June. As such, Peak Month Average Day (PMAD) passenger activity from 2002 through 2022 was derived by dividing the peak month passenger volumes projected for those years by 31.

The yearly projections of peak month and PMAD domestic and international passenger enplanements are presented with the projected peak month and PMAD commercial aircraft operations in a subsequent section. In summary, peak month and PMAD domestic passenger enplanements are projected to reach 3.8 million and 123,000 respectively in 2014. In 2022, peak month and PMAD domestic passenger enplanements are projected to reach 4.4 million and 142,300 respectively.

Similarly, peak month and PMAD international passenger enplanements are projected to reach 986,100 and 31,800 respectively in 2014. In 2022, peak month and PMAD international passenger enplanements are projected to reach 1.3 million and 41,100 respectively.

VII. Derivative Demand Profiles – Aircraft Operations

In addition to the projections of total annual passenger enplanements, the 2001 TAF's provided annual forecasts of aircraft operations for ORD. The projections of future aircraft operations are provided for the following traffic components: air carrier, commuter/air taxi, local and itinerant general aviation, and military. The segregation of air carrier and commuter operations in the TAF's is based on fleet size. Commercial service aircraft with a seating capacity of 60 seats or less are categorized as commuter activity. Non-scheduled/charter operations are also included within the commuter/air taxi category. Accordingly, air carrier activity comprises all commercial service, scheduled operations by fleets with a seating capacity that exceeds 60 seats. In addition, the FAA allocates aircraft operations by all-cargo operators, or by commercial airlines operating flights for the sole purpose of cargo transport, to either the air carrier or the commuter/air taxi categories.

For the OMP demand analysis, aircraft operations were categorized using the traditional designations commonly adopted in master planning forecasts. These designations include domestic air carrier and commuter operations, international operations, all-cargo operations, general aviation/miscellaneous operations, and military operations. In addition, it is assumed that future commuter operations comprise air carrier activity using fleets with a seating capacity of 75 seats and smaller. This designation allows for the consideration of the 70-seat regional jets, currently under production by aircraft manufacturers like Canadair, which are likely to be in operation during the 20-year horizon.

The FAA is currently giving consideration to increasing the definition of commuter activity to include these larger regional jets and will likely reflect this change in future TAF projections.

Utilization of the designations identified above for the OMP demand analysis is preferred over those provided in the published TAF's since they allow for the formulation of derivative aircraft operations forecasts that can be directly correlated to the derivative passenger forecasts previously presented. These designations also facilitate the transformation of the 2001 TAF demand projections into the various airfield, terminal, cargo, general aviation and other support facility requirements.

Tables VII-1 through VII-3 summarize the annual, peak month, and PMAD aircraft operations derived from the 2001 TAF's. The following sections further discuss the methodology used to derive the aircraft operation's derivative forecasts for ORD using the 2001 TAF's annual projections.

7.1 Domestic Air Carrier and Commuter – Annual Departures

Table VII-4 presents the 2001 TAF derivative forecasts for annual domestic commercial departures. As shown, domestic annual aircraft departures have been projected separately for air carrier activity and commuter activity. In subsequent tables and discussions, air carrier and commuter operations have been merged together and referred to as total domestic operations.

Commercial aircraft departures were derived using the projections for passenger enplanements as well as estimates of future growth in boarding load factors and seats per operation based on historic trends. It is assumed that simultaneous growth in load factors and fleet size will continue for most of the demand analysis period.

A summary of the growth patterns for domestic air carrier and commuter departures resulting from the assumptions made and methodology used to establish the derivative forecasts shown in Table VII-4 are provided below.

- Average seats per domestic air carrier departure are assumed to grow gradually from 1.0 to 1.5 seats per year between 2001 through 2022, with the more modest increases occurring in the early forecast years and later increasing to 1.25 average seats per year along with continued growth in load factors through 2010, when average load factors are projected to exceed 75.5 percent. Beyond 2010, average load factors are assumed to remain relatively stable, ranging between 75 and 76 percent, and seats are projected to grow 1.5 seats per year, on average, in order to accommodate the continued growth in domestic passenger demand.
- Similarly, average seats per domestic commuter departures are assumed to grow steadily from 0.5 to 1.0 seats per year from 2001 through 2022. From 2001 through 2010, the fleet size is assumed to grow an average of 0.5 seats per year, thus reflecting a shift from the turboprop aircraft (37 to 42 seats) to the small regional jet fleets (ranging from 37-50 seats in most cases, with some of the larger 70-seat aircraft being used to serve the high demand markets). Load factors during this period are also assumed to continue growing, exceeding 69 percent by 2010. Beyond 2010, load factors are assumed to remain relatively stable, ranging between 69 and 69.5 percent, and seats are projected to grow 1.0 seats per year, on average, as an increased share of the regional markets begin to get served by larger (70-seat and larger) jets.

Table VII-1

Summary - Total Annual Aircraft Operations

		ANNUAL ACTIVITY									
		Air Carrier (Domestic and International)		All-Cargo ⁴		General Aviation/Misc. ⁵		Military ⁵		Total ⁶	
Calendar Year		Operations	% of Total	Operations	% of Total	Operations	% of Total	Operations	% of Total	Operations	% of Total
Historic ²	1990	766,543	94.5%	14,718	1.8%	26,479	3.3%	3,125	0.4%	810,865	100.0%
	1991	761,603	93.6%	15,495	1.9%	33,971	4.2%	2,827	0.3%	813,896	100.0%
	1992	787,671	93.6%	16,240	1.9%	33,864	4.0%	3,418	0.4%	841,193	100.0%
	1993	798,422	92.9%	15,946	1.9%	41,365	4.8%	3,475	0.4%	859,208	100.0%
	1994	789,589	89.4%	17,129	1.9%	73,199	8.3%	3,145	0.4%	883,062	100.0%
	1995	809,834	90.0%	18,338	2.0%	68,819	7.6%	3,288	0.4%	900,279	100.0%
	1996	814,617	89.6%	19,184	2.1%	72,854	8.0%	2,938	0.3%	909,593	100.0%
	1997	813,926	92.1%	20,630	2.3%	47,035	5.3%	2,170	0.2%	883,761	100.0%
	1998	826,285	92.2%	24,325	2.7%	43,228	4.8%	2,266	0.3%	896,104	100.0%
	1999	831,800	94.0%	23,984	2.7%	28,229	3.2%	770	0.1%	884,783	100.0%
	2000	848,502	93.3%	23,952	2.6%	36,535	4.0%	0	0.0%	908,989	100.0%
2001	853,664	93.6%	21,105	2.3%	37,148	4.1%	0	0.0%	911,917	100.0%	
Projected ³	2002	884,031	94.8%	23,846	2.6%	24,499	2.6%	167	0.0%	932,542	100.0%
	2003	897,309	94.8%	24,349	2.6%	24,499	2.6%	167	0.0%	946,324	100.0%
	2004	910,588	94.8%	24,853	2.6%	24,499	2.6%	167	0.0%	960,107	100.0%
	2005	923,868	94.9%	25,356	2.6%	24,499	2.5%	167	0.0%	973,890	100.0%
	2006	937,147	94.9%	25,859	2.6%	24,499	2.5%	167	0.0%	987,673	100.0%
	2007	950,427	94.9%	26,363	2.6%	24,499	2.4%	167	0.0%	1,001,456	100.0%
	2008	963,706	94.9%	26,866	2.6%	24,499	2.4%	167	0.0%	1,015,238	100.0%
	2009	976,984	94.9%	27,370	2.7%	24,499	2.4%	167	0.0%	1,029,202	100.0%
	2010	990,264	95.0%	27,873	2.7%	24,499	2.3%	167	0.0%	1,042,803	100.0%
	2011	1,003,543	95.0%	28,377	2.7%	24,499	2.3%	167	0.0%	1,056,586	100.0%
	2012	1,016,823	95.0%	28,880	2.7%	24,499	2.3%	167	0.0%	1,070,369	100.0%
	2013	1,030,102	95.0%	29,383	2.7%	24,499	2.3%	167	0.0%	1,084,152	100.0%
	2014	1,043,382	95.0%	29,887	2.7%	24,499	2.2%	167	0.0%	1,097,935	100.0%
	2015	1,056,391	95.0%	30,390	2.7%	24,499	2.2%	167	0.0%	1,111,447	100.0%
Projected by Extrapolating the 2001 TAF's	2016	1,068,806	95.1%	30,894	2.7%	24,499	2.2%	167	0.0%	1,124,366	100.0%
	2017	1,081,883	95.1%	31,397	2.8%	24,499	2.2%	167	0.0%	1,137,946	100.0%
	2018	1,094,959	95.1%	31,901	2.8%	24,499	2.1%	167	0.0%	1,151,525	100.0%
	2019	1,108,035	95.1%	32,404	2.8%	24,499	2.1%	167	0.0%	1,165,105	100.0%
	2020	1,121,111	95.1%	32,907	2.8%	24,499	2.1%	167	0.0%	1,178,685	100.0%
	2021	1,134,188	95.1%	33,411	2.8%	24,499	2.1%	167	0.0%	1,192,265	100.0%
	2022	1,147,264	95.1%	33,914	2.8%	24,499	2.0%	167	0.0%	1,205,844	100.0%

Average Annual Growth Rates:

1990-2001	1.0%	3.3%	3.1%	-74.3%	1.1%
2001-2007	1.8%	3.8%	-6.7%	642.1%	1.6%
2007-2014	1.3%	1.8%	0.0%	0.0%	1.3%
2014-2022	1.2%	1.6%	0.0%	0.0%	1.2%

Notes:

- Includes Canadian activity as domestic traffic.
- Historic Enplanements and Operations: as obtained from the City of Chicago's Department of Aviation Management Records (adjusted to reflect Canadian activity as domestic traffic).
- The total historic aircraft operations summarized above reflect the traffic volumes shown in the Year End reports (i.e., Year To Date issued in December of each year) prepared by the DOA. The summation of the individual monthly reports published by the D
- Projections of future all-cargo operations derived by R&A using a trend analysis for historic activity from 1996-2001.
- Future projections of general aviation and military operations were obtained from the 2001 FAA Terminal Area Forecasts.
- Total projected aircraft operations were obtained from the 2001 FAA Terminal Area Forecasts and converted to calendar years.
Blue text denotes activity projections beyond the forecast horizon for the 2001 FAA Terminal Area Forecasts.

Sources: 2001 FAA Terminal Area Forecasts; City of Chicago Airport Traffic Statistics; Ricondo & Associates, Inc.

Prepared by: Ricondo & Associates, Inc., February 2003

Table VII-2

Summary - Peak Month Aircraft Operations

	Calendar Year	PEAK MONTH									
		Air Carrier (Domestic and International)		All-Cargo		General Aviation/Misc.		Military		Total	
		Operations	% of Total	Operations	% of Annual	Operations	% of Annual	Operations	% of Annual	Operations	% of Annual
Historic ²	1990	67,310	22.5%	1,206	8.2%	2,080	7.9%	390	12.5%	70,986	8.8%
	1991	68,124	22.9%	1,413	9.1%	3,725	11.0%	254	9.0%	73,516	9.0%
	1992	69,645	22.4%	1,332	8.2%	3,328	9.8%	374	10.9%	74,679	8.9%
	1993	67,999	21.2%	1,406	8.8%	4,732	11.4%	286	8.2%	74,423	8.7%
	1994	71,240	21.2%	1,396	8.1%	6,106	8.3%	376	12.0%	79,118	9.0%
	1995	71,888	22.2%	1,704	9.3%	5,907	8.6%	448	13.6%	79,947	8.9%
	1996	71,834	20.7%	1,663	8.7%	7,431	10.2%	440	15.0%	81,368	8.9%
	1997	70,558	20.6%	1,754	8.5%	5,196	11.0%	183	8.4%	77,691	8.8%
	1998	73,173	20.4%	2,135	8.8%	3,424	7.9%	181	8.0%	78,913	8.8%
	1999	73,617	19.8%	1,940	8.1%	4,209	14.9%	0	0.0%	79,766	9.0%
	2000	76,704	18.7%	2,034	8.5%	3,366	9.2%	0	0.0%	82,104	9.0%
2001	79,953	18.0%	1,847	8.8%	2,919	7.9%	0	0.0%	84,719	9.3%	
Projected ³	2002	78,309	20.2%	2,047	8.6%	2,366	9.7%	18	11.0%	82,741	8.9%
	2003	79,551	20.2%	2,090	8.6%	2,366	9.7%	18	11.0%	84,025	8.9%
	2004	80,802	20.2%	2,133	8.6%	2,366	9.7%	18	11.0%	85,320	8.9%
	2005	82,052	20.2%	2,176	8.6%	2,366	9.7%	18	11.0%	86,613	8.9%
	2006	83,303	20.2%	2,219	8.6%	2,366	9.7%	18	11.0%	87,908	8.9%
	2007	84,556	20.2%	2,263	8.6%	2,366	9.7%	18	11.0%	89,204	8.9%
	2008	85,812	20.2%	2,306	8.6%	2,366	9.7%	18	11.0%	90,503	8.9%
	2009	87,065	20.2%	2,349	8.6%	2,366	9.7%	18	11.0%	91,799	8.9%
	2010	88,320	20.2%	2,392	8.6%	2,366	9.7%	18	11.0%	93,098	8.9%
	2011	89,577	20.2%	2,435	8.6%	2,366	9.7%	18	11.0%	94,397	8.9%
	2012	90,835	20.2%	2,479	8.6%	2,366	9.7%	18	11.0%	95,698	8.9%
	2013	92,062	20.2%	2,522	8.6%	2,366	9.7%	18	11.0%	96,968	8.9%
	2014	93,289	20.2%	2,565	8.6%	2,366	9.7%	18	11.0%	98,239	8.9%
	2015	94,493	20.2%	2,608	8.6%	2,366	9.7%	18	11.0%	99,486	9.0%
Projected by Extrapolating the 2001 TAF's	2016	95,646	20.2%	2,652	8.6%	2,366	9.7%	18	11.0%	100,683	9.0%
	2017	96,857	20.2%	2,695	8.6%	2,366	9.7%	18	11.0%	101,936	9.0%
	2018	98,068	20.2%	2,738	8.6%	2,366	9.7%	18	11.0%	103,191	9.0%
	2019	99,279	20.2%	2,781	8.6%	2,366	9.7%	18	11.0%	104,445	9.0%
	2020	100,490	20.2%	2,824	8.6%	2,366	9.7%	18	11.0%	105,700	9.0%
	2021	101,702	20.2%	2,868	8.6%	2,366	9.7%	18	11.0%	106,955	9.0%
	2022	102,914	20.2%	2,911	8.6%	2,366	9.7%	18	11.0%	108,210	9.0%

Notes:

¹ The historic statistics presented above have not been adjusted to reflect Canadian activity as domestic. These figures represent activity as recorded by the City of Chicago's DOA.

² Historic Enplanements and Operations: as obtained from the City of Chicago's Department of Aviation Management Records

³ Non-commercial peak month projections derived using average shares of peak month to annual activity from CY 1990 through CY 2001. Domestic Air Carrier and Commuter peak month projections derived using the average share of the peak month to annual activity
Blue text denotes activity projections beyond the forecast horizon for the 2001 FAA Terminal Area Forecasts.

Table VII-3

Summary - Peak Month Average Day (PMAD) Aircraft Operations

		PEAK MONTH AVERAGE DAY (PMAD)									
		Air Carrier (Domestic and International)		All-Cargo		General Aviation/Misc.		Military		Total	
Calendar Year		Operations	% of Total	Operations	Share of Peak Month	Operations	Share of Peak Month	Operations	Share of Peak Month	Operations	Share of Peak Month
Historic ²	1990	2,171	6.5%	39	1/31	67	1/31	13	1/31	2,290	1/31
	1991	2,198	6.5%	46	1/31	120	1/31	8	1/31	2,371	1/31
	1992	2,247	6.5%	43	1/31	107	1/31	12	1/31	2,409	1/31
	1993	2,194	6.5%	45	1/31	153	1/31	9	1/31	2,401	1/31
	1994	2,298	6.5%	45	1/31	197	1/31	12	1/31	2,552	1/31
	1995	2,319	6.5%	55	1/31	191	1/31	14	1/31	2,579	1/31
	1996	2,317	6.5%	54	1/31	240	1/31	14	1/31	2,625	1/31
	1997	2,276	6.5%	57	1/31	168	1/31	6	1/31	2,506	1/31
	1998	2,360	6.5%	69	1/31	110	1/31	6	1/31	2,546	1/31
	1999	2,375	6.5%	63	1/31	136	1/31	0	1/31	2,573	1/31
	2000	2,474	6.5%	66	1/31	109	1/31	0	1/31	2,649	1/31
2001	2,578	6.5%	60	1/31	94	1/31	0	1/31	2,732	1/31	
Projected ³	2002	2,526	6.5%	66	1/31	76	1/31	1	1/31	2,669	1/31
	2003	2,566	6.5%	67	1/31	76	1/31	1	1/31	2,710	1/31
	2004	2,607	6.5%	69	1/31	76	1/31	1	1/31	2,752	1/31
	2005	2,647	6.5%	70	1/31	76	1/31	1	1/31	2,794	1/31
	2006	2,687	6.5%	72	1/31	76	1/31	1	1/31	2,836	1/31
	2007	2,728	6.5%	73	1/31	76	1/31	1	1/31	2,878	1/31
	2008	2,768	6.5%	74	1/31	76	1/31	1	1/31	2,919	1/31
	2009	2,809	6.5%	76	1/31	76	1/31	1	1/31	2,961	1/31
	2010	2,849	6.5%	77	1/31	76	1/31	1	1/31	3,003	1/31
	2011	2,890	6.5%	79	1/31	76	1/31	1	1/31	3,045	1/31
	2012	2,930	6.5%	80	1/31	76	1/31	1	1/31	3,087	1/31
Projected by Extrapolating the 2001 TAF's	2013	2,970	6.5%	81	1/31	76	1/31	1	1/31	3,128	1/31
	2014	3,009	6.5%	83	1/31	76	1/31	1	1/31	3,169	1/31
	2015	3,048	6.5%	84	1/31	76	1/31	1	1/31	3,209	1/31
	2016	3,085	6.5%	86	1/31	76	1/31	1	1/31	3,248	1/31
	2017	3,124	6.5%	87	1/31	76	1/31	1	1/31	3,288	1/31
	2018	3,163	6.5%	88	1/31	76	1/31	1	1/31	3,329	1/31
	2019	3,203	6.5%	90	1/31	76	1/31	1	1/31	3,369	1/31
	2020	3,242	6.5%	91	1/31	76	1/31	1	1/31	3,410	1/31
	2021	3,281	6.5%	93	1/31	76	1/31	1	1/31	3,450	1/31
	2022	3,320	6.5%	94	1/31	76	1/31	1	1/31	3,491	1/31

Notes:

1 Includes Canadian activity as domestic traffic.

2 Historic Annual and Operations: as obtained from the City of Chicago's Department of Aviation Management Records (adjusted to reflect Canadian activity as domestic traffic); PMAD Operations derived by Ricondo & associates, Inc.

3 Derived using the 2001 FAA Terminal Area Forecasts

Blue text denotes activity projections beyond the forecast horizon for the 2001 FAA Terminal Area Forecasts.

Sources: 2001 FAA Terminal Area Forecasts; City of Chicago Airport Traffic Statistics; Ricondo & Associates, Inc.

Prepared by: Ricondo & Associates, Inc., February 2003

Table VII-4

Domestic Activity - Annual Projections

Calendar Year	Domestic - Air Carrier				Domestic - Commuter/Regionals				Total Domestic				
	Enplanements	Aircraft Departures	Load Factor	Seat Size	Enplanements	Aircraft Departures	Load Factor	Seat Size ⁴	Enplanements	Aircraft Departures	Load Factor	Seat Size	
Historic²	1990	26,762,818	316,808	58.5%	144.4	1,103,512	54,478	45.2%	44.8	27,866,330	371,286	57.8%	129.8
	1991	25,681,831	283,769	62.5%	144.7	2,144,489	84,400	55.0%	46.2	27,826,320	368,169	61.9%	122.1
	1992	27,415,966	298,371	64.3%	143.0	2,338,365	80,979	56.7%	50.9	29,754,331	379,350	63.6%	123.3
	1993	27,623,384	308,385	61.7%	145.1	2,286,609	74,659	57.7%	53.1	29,909,993	383,044	61.4%	127.2
	1994	28,017,557	298,991	66.5%	141.0	2,524,091	79,204	57.7%	55.2	30,541,648	378,195	65.6%	123.0
	1995	28,149,029	304,078	67.3%	137.5	2,347,024	84,211	55.0%	50.7	30,496,053	388,289	66.2%	118.7
	1996	28,982,090	303,659	69.3%	137.8	2,497,080	85,465	57.4%	50.9	31,479,170	389,124	68.1%	118.7
	1997	29,322,431	306,484	69.5%	137.6	2,536,345	80,659	61.4%	51.2	31,858,776	387,143	68.8%	119.6
	1998	29,629,918	305,373	69.5%	139.7	2,826,047	85,242	63.0%	52.6	32,455,965	390,615	68.8%	120.7
	1999	29,383,237	304,717	68.5%	140.8	2,830,215	86,014	65.8%	50.0	32,213,452	390,731	68.2%	120.8
	2000	28,611,661	296,144	73.5%	131.4	3,041,289	100,328	63.6%	47.7	31,652,950	396,472	72.4%	110.2
	2001	25,995,242	285,879	72.5%	125.5	3,493,518	114,869	62.7%	48.5	29,488,760	400,748	71.1%	103.4
Projected³	2002	27,435,186	297,003	73.0%	126.5	3,668,194	115,829	64.6%	49.0	31,103,380	412,832	71.9%	104.8
	2003	28,091,471	298,849	73.6%	127.8	3,833,263	119,024	65.1%	49.5	31,924,734	417,874	72.4%	105.5
	2004	28,709,485	300,513	74.1%	129.0	4,005,759	122,220	65.6%	50.0	32,715,245	422,733	72.9%	106.2
	2005	29,310,587	302,214	74.5%	130.3	4,186,019	125,415	66.1%	50.5	33,496,606	427,629	73.3%	106.9
	2006	29,894,426	303,883	74.8%	131.5	4,374,389	128,611	66.7%	51.0	34,268,816	432,494	73.7%	107.6
	2007	30,460,639	305,521	75.1%	132.8	4,571,237	131,806	67.3%	51.5	35,031,876	437,327	74.0%	108.3
	2008	31,006,552	307,114	75.3%	134.0	4,776,943	135,002	68.0%	52.0	35,783,495	442,116	74.3%	109.0
	2009	31,544,926	308,745	75.5%	135.3	4,991,905	138,197	68.8%	52.5	36,536,831	446,942	74.5%	109.7
	2010	32,064,912	310,350	75.7%	136.5	5,216,541	141,392	69.6%	53.0	37,281,453	451,742	74.8%	110.4
	2011	32,592,157	311,928	75.7%	138.0	5,425,202	144,588	69.5%	54.0	38,017,359	456,516	74.8%	111.4
	2012	33,102,340	313,481	75.7%	139.5	5,642,211	147,783	69.4%	55.0	38,744,550	461,265	74.7%	112.4
	2013	33,690,207	315,587	75.7%	141.0	5,867,899	150,979	69.4%	56.0	39,558,106	466,566	74.7%	113.5
	2014	34,264,690	317,687	75.7%	142.5	6,102,615	154,174	69.4%	57.0	40,367,305	471,861	74.7%	114.6
	2015	34,826,583	319,660	75.7%	144.0	6,346,719	157,353	69.5%	58.0	41,173,303	477,013	74.6%	115.6
Projected by Extrapolating the 2001 TAF's	2016	35,408,602	321,365	75.7%	145.5	6,568,855	160,495	69.4%	59.0	41,977,456	481,861	74.7%	116.7
	2017	35,975,669	323,358	75.7%	147.0	6,798,765	163,678	69.2%	60.0	42,774,434	487,036	74.6%	117.8
	2018	36,530,328	325,345	75.6%	148.5	7,036,721	166,861	69.1%	61.0	43,567,049	492,206	74.5%	118.8
	2019	37,072,296	327,327	75.5%	150.0	7,283,007	170,044	69.1%	62.0	44,355,303	497,371	74.4%	119.9
	2020	37,601,283	329,305	75.4%	151.5	7,537,912	173,227	69.1%	63.0	45,139,195	502,532	74.2%	121.0
	2021	38,116,987	331,277	75.2%	153.0	7,801,739	176,410	69.1%	64.0	45,918,726	507,688	74.1%	122.1
	2022	38,619,096	333,246	75.0%	154.5	8,074,800	179,593	69.2%	65.0	46,693,895	512,839	73.9%	123.2

Notes:

- 1 Includes Canadian activity as domestic traffic.
- 2 Historic Domestic Enplanements and Operations: as obtained from the City of Chicago's Department of Aviation Management Records (adjusted to reflect Canadian activity as domestic traffic) or as included in the 2002 Draft FAA Terminal Area Forecasts
 Historic Seat Size: as obtained from the FAA 2001 TAF database/DOT T100 Database
 Historic Load Factors: Derived by Ricondo & Associates, Inc.
- 3 Projected Load Factors and Seat Size derived by Ricondo & Associates, Inc.
- 4 Historic Commuter Seat Size: as obtained from the Official Airline Guide
 Blue text denotes activity projections beyond the forecast horizon for the 2001 FAA Terminal Area Forecasts.

Sources: 2001 FAA Terminal Area Forecasts; City of Chicago Airport Traffic Statistics; U.S. DOT T100, Form 41 Database; Ricondo & Associates, Inc.

Prepared by: Ricondo & Associates, Inc., February 2003

Based on the fleet size and load factor assumptions, future projections of annual domestic air carrier departures were derived. These projections reflect growth in domestic air carrier departures reaching approximately 317,700 and 333,200 annual departures in 2014 and 2022 respectively, in comparison to the 285,879 annual departures experienced in 2001.

7.2 Domestic Air Carrier and Commuter – Peak Month/PMAD Departures

For purposes of deriving peak month and PMAD activity projections and for the subsequent development of future design day schedules, domestic air carrier and commuter activity was combined under one total domestic activity category. However, the identity of mainline (commercial fleet) carriers versus regional service/commuter carriers was maintained, and the market shares historically maintained by these carriers at ORD were considered in the development of the future design day schedules. Further discussion on the assumptions and methodology used to derive the future design day schedules is provided in a subsequent section of this document.

Similar to the derivation of peak month and PMAD passenger enplanements, the annual projections of domestic (commercial service) aircraft departures were converted into peak month equivalents using historical traffic statistics collected by the DOA. Historical traffic statistics for the period 1990-2000 was used to derive the average percent of domestic peak month departures relative to total annual domestic departures. Once again, the share of peak month to annual domestic aircraft operations for 2001 was not considered given the skewed ratio resulting from the sharp decrease in fourth quarter traffic due to the September 11, 2001 terrorist attacks.

The peak month to annual relationship associated with domestic air carrier and commuter departures was established for each year, starting in 1990 and ending in 2000. The average share of peak month to annual domestic departures is 8.7 percent for the 11-year period. This share was held constant through the 20-year demand analysis period and used to derive domestic peak month departure projections from 2002 through 2022.

For commuter traffic it was assumed that the average seats per departure were the same annually and during the peak month, thus resulting in higher load factors during the peak month (exceeding 75 percent in 2010 and beyond). Conversely, domestic air carrier activity was assumed to maintain its annual load factors constant during the peak month, resulting in an increase in seating capacity during the peak month (e.g., 139.3 average seats per peak month domestic departure versus 125.5 average seats per annual domestic departure in 2001 and 168.3 average seats per peak month domestic departure versus 154.5 average seats per annual domestic departure in 2022).

These assumptions and methodologies resulted in the peak month demand projections presented in **Table VII-5**. As shown, peak month domestic departures are projected to grow to approximately 40,900 in 2014 and 44,500 in 2020. In 2001, ORD experienced 33,734 peak month domestic departures.

Table VII-5 also presents the PMAD domestic departures for the 20-year demand analysis period. Future PMAD departures were derived by dividing the peak month departures by 31. PMAD load factors and average seat size per departure for each year are assumed to be the same as those derived for the peak month for the corresponding year. As shown, domestic PMAD departures are projected to grow to approximately 1,320 in 2014 and 1,435 in 2022, in comparison to the 1,217 domestic PMAD departures experienced at ORD in 2001.

Table VII-5

Domestic Activity - Derivative Profiles (Annual, Peak Month, and Peak Month Average Day)

Calendar Year	ANNUAL ACTIVITY (Air Carrier and Commuter Combined)				PEAK MONTH ACTIVITY ⁴						PEAK MONTH AVERAGE DAY ACTIVITY					
	Enplanements	Aircraft Departures	Load Factor	Seat Size	Month	Enplanements	% of Annual	Aircraft Departures	% of Annual	Load Factor	Seat Size	Enplanements	Aircraft Departures	Load Factor	Seat Size	
Historic ²	1990	27,866,330	371,286	57.8%	129.8	August	2,648,883	9.5%	31,776	8.6%	64.1%	130.1	85,448	1,025	64.1%	130.1
	1991	27,826,320	368,169	61.9%	122.1	August	2,713,241	9.8%	32,275	8.8%	64.7%	130.0	87,524	1,041	64.7%	130.0
	1992	29,754,331	379,350	63.6%	123.3	August	3,134,512	10.5%	32,875	8.7%	73.1%	130.5	101,113	1,060	73.1%	130.5
	1993	29,909,993	383,044	61.4%	127.2	August	2,797,906	9.4%	32,855	8.6%	63.8%	133.4	90,255	1,060	63.8%	133.4
	1994	30,541,648	378,195	65.6%	123.0	August	2,880,935	9.4%	33,575	8.9%	68.5%	125.2	92,933	1,083	68.5%	125.2
	1995	30,496,053	388,289	66.2%	118.7	August	2,841,352	9.3%	33,593	8.7%	68.9%	122.7	91,657	1,084	68.9%	122.7
	1996	31,479,170	389,124	68.1%	118.7	July	2,889,039	9.2%	33,021	8.5%	69.9%	125.2	93,195	1,065	69.9%	125.2
	1997	31,858,776	387,143	68.8%	119.6	July	2,928,584	9.2%	32,898	8.5%	70.7%	126.0	94,470	1,061	70.7%	126.0
	1998	32,455,965	390,615	68.8%	120.7	July	2,975,828	9.2%	33,050	8.5%	72.5%	124.2	95,994	1,066	72.5%	124.2
	1999	32,213,452	390,731	68.2%	120.8	July	3,032,159	9.4%	32,889	8.4%	72.7%	126.9	97,812	1,061	72.7%	126.9
	2000	31,652,950	396,472	72.4%	110.2	July	2,900,576	9.2%	33,483	8.4%	73.5%	117.9	93,567	1,080	73.5%	117.9
2001	29,488,760	400,748	71.1%	103.4	July	3,061,711	10.4%	37,734	9.4%	71.5%	113.5	98,765	1,217	71.5%	113.5	
Projected ³	2002	31,103,380	412,832	71.9%	104.8	-	2,937,957	9.4%	35,804	8.7%	72.7%	112.9	94,773	1,155	72.7%	112.9
	2003	31,924,734	417,874	72.4%	105.5	-	3,015,540	9.4%	36,242	8.7%	73.2%	113.6	97,275	1,169	73.2%	113.6
	2004	32,715,245	422,733	72.9%	106.2	-	3,090,210	9.4%	36,663	8.7%	73.7%	114.3	99,684	1,183	73.7%	114.3
	2005	33,496,606	427,629	73.3%	106.9	-	3,164,016	9.4%	37,088	8.7%	74.1%	115.1	102,065	1,196	74.1%	115.1
	2006	34,268,816	432,494	73.7%	107.6	-	3,236,957	9.4%	37,510	8.7%	74.5%	115.8	104,418	1,210	74.5%	115.8
	2007	35,031,876	437,327	74.0%	108.3	-	3,309,034	9.4%	37,929	8.7%	74.9%	116.5	106,743	1,224	74.9%	116.5
	2008	35,783,495	442,116	74.3%	109.0	-	3,380,030	9.4%	38,344	8.7%	75.2%	117.3	109,033	1,237	75.2%	117.3
	2009	36,536,831	446,942	74.5%	109.7	-	3,451,189	9.4%	38,763	8.7%	75.5%	118.0	111,329	1,250	75.5%	118.0
	2010	37,281,453	451,742	74.8%	110.4	-	3,521,524	9.4%	39,179	8.7%	75.7%	118.7	113,598	1,264	75.7%	118.7
	2011	38,017,359	456,516	74.8%	111.4	-	3,591,036	9.4%	39,593	8.7%	75.7%	119.8	115,840	1,277	75.7%	119.8
	2012	38,744,550	461,265	74.7%	112.4	-	3,659,725	9.4%	40,005	8.7%	75.7%	120.9	118,056	1,290	75.7%	120.9
Projected by Extrapolating the 2001 TAF's	2013	39,558,106	466,566	74.7%	113.5	-	3,736,572	9.4%	40,465	8.7%	75.7%	122.0	120,535	1,305	75.7%	122.0
	2014	40,367,305	471,861	74.7%	114.6	-	3,813,007	9.4%	40,924	8.7%	75.7%	123.1	123,000	1,320	75.7%	123.1
	2015	41,173,303	477,013	74.6%	115.6	-	3,889,140	9.4%	41,371	8.7%	75.7%	124.2	125,456	1,335	75.7%	124.2
	2016	41,977,456	481,861	74.7%	116.7	-	3,965,098	9.4%	41,791	8.7%	75.7%	125.3	127,906	1,348	75.7%	125.3
	2017	42,774,434	487,036	74.6%	117.8	-	4,040,379	9.4%	42,240	8.7%	75.6%	126.5	130,335	1,363	75.6%	126.5
	2018	43,567,049	492,206	74.5%	118.8	-	4,115,248	9.4%	42,688	8.7%	75.6%	127.6	132,750	1,377	75.6%	127.6
	2019	44,355,303	497,371	74.4%	119.9	-	4,189,704	9.4%	43,136	8.7%	75.5%	128.7	135,152	1,391	75.5%	128.7
	2020	45,139,195	502,532	74.2%	121.0	-	4,263,749	9.4%	43,584	8.7%	75.3%	129.8	137,540	1,406	75.3%	129.8
	2021	45,918,726	507,688	74.1%	122.1	-	4,337,382	9.4%	44,031	8.7%	75.2%	131.0	139,916	1,420	75.2%	131.0
	2022	46,693,895	512,839	73.9%	123.2	-	4,410,603	9.4%	44,478	8.7%	75.1%	132.1	142,278	1,435	75.1%	132.1

Notes:

- 1 Includes Canadian activity as domestic traffic.
- 2 Historic Domestic Enplanements and Operations: as obtained from the City of Chicago's Department of Aviation Management Records (adjusted to reflect Canadian activity as domestic traffic) or as included in the 2002 Draft FAA Terminal Area Forecasts
Historic Seat Size: as obtained from the FAA TAF database/DOT T100 Database
Historic Load Factors: Derived by Ricondo & Associates, Inc.
- 3 Projected Load Factors and Seat Size derived by Ricondo & Associates, Inc.
- 4 Historic Peak Month Activity derived using historic scheduled commuter seats as obtained from the Official Airline Guide and historic air carrier peak month load factors as obtained from the Form 41, T100 database. Peak Month Projected Activity derived using average peak month share of annual activity from 1990-2000. Other assumptions:
 - a) Domestic air carrier load factors in the peak month equal annual domestic air carrier load factors
 - b) Domestic commuter seats per departure in the peak month equal the average annual seats per departure for commuter/regional activity.
 Blue text denotes activity projections beyond the forecast horizon for the 2001 FAA Terminal Area Forecasts.

7.3 Annual International Departures

Table VII-6 presents the 2001 TAF derivative forecasts for international air carrier departures. Like the projections of domestic air carrier and commuter departures, international aircraft departures were derived using the projections for international enplanements and estimates of future growth in boarding load factors and seats per operation based on historic trends.

It is assumed that simultaneous growth in load factors and fleet size will continue throughout the analysis period. Once again, it is assumed that there will be a conscious effort to closely balance aircraft seating capacity to passenger demand on a market-by-market basis. However, many of the international markets currently served from ORD comprise Asian and European cities, and to a lesser extent markets in Mexico and South/Central America, a trend that is expected to continue in the future. As such, the stage lengths associated with many of these international markets, particularly those located within the Asian and European regions, limit the types of aircraft that can be used to serve these markets. For this reason, the majority of the international fleet is comprised of wide body and jumbo body aircraft, except for many of the flights to Mexico, the Caribbean, and cities in South or Central America.

As shown in Table VII-6, average seats per international air carrier departure are assumed to grow gradually from 0.5 to 1.0 seats per year between 2001 through 2022, with the more modest increases occurring in the early forecast years and later increasing one seat per year, on average, through 2022. Load factors are also projected to grow steadily throughout the 20-year demand analysis period, reaching 72.4 percent in 2014 and 74.0 percent in 2022.

Based on the fleet size and load factor assumptions summarized above and presented in Table VII-6, annual projections of international air carrier departures were derived. These projections reflect growth in international air carrier departures reaching approximately 49,800 and 60,800 annual departures in 2014 and 2022 respectively, in comparison to the 26,086 annual departures experienced in 2001.

7.4 International Air Carrier Peak Month/PMAD Departures

Similar to the derivation of peak month and PMAD domestic air carrier and commuter departures, the annual projections of international air carrier departures were converted into peak month equivalents using historical traffic statistics collected by the DOA. Historical traffic statistics for the period 1996-2000 (i.e., the same historical period used to derive the ratio of peak month international enplanements to annual international enplanements) was used to derive the average percent of international peak month departures relative to annual air carrier international departures.

The average share of peak month annual international departures is 11.9 percent for the five-year period. This share was held constant through the 20-year demand analysis period and used to derive international peak month departure projections from 2002 through 2022. In addition, international air carrier activity was assumed to maintain the same rate of annual growth in average seats per departure during the peak month (i.e. a growth of 0.5 seats per year through 2004, and one seat per year from 2004 through 2022). Peak month load factors are also projected to grow steadily throughout the 20-year demand analysis period, reaching 66.5 percent in 2014 and 68.3 percent in 2022. In general, future international departures during the peak month will continue to be characterized by larger fleets and lower load factors, similar to historical trends at the Airport.

Table VII-6

International Activity - Derivative Profiles (Annual, Peak Month, and Peak Month Average Day)

Calendar Year	ANNUAL ACTIVITY				PEAK MONTH ACTIVITY				PEAK MONTH AVERAGE DAY ACTIVITY							
	Enplanements	Aircraft Departures	Load Factor	Seat Size	Month	Enplanements	% of Annual	Aircraft Departures	% of Annual	Load Factor	Seat Size ⁴	Enplanements	Aircraft Departures	Load Factor	Seat Size ⁴	
Historic ²	1990	1,552,672	12,033	59.9%	215.5	August	242,490	15.6%	1,673	13.9%	63.2%	229.4	7,822	54	63.2%	229.4
	1991	1,550,029	12,471	59.1%	210.3	August	245,615	15.8%	1,763	14.1%	59.8%	233.1	7,923	57	59.8%	233.1
	1992	1,900,743	14,321	65.5%	202.7	August	245,273	12.9%	1,967	13.7%	58.0%	214.8	7,912	63	58.0%	214.8
	1993	2,074,005	16,272	61.0%	209.1	August	291,171	14.0%	2,056	12.6%	61.8%	229.1	9,393	66	61.8%	229.1
	1994	2,177,077	16,556	65.2%	201.8	August	287,879	13.2%	2,041	12.3%	63.9%	220.8	9,286	66	63.9%	220.8
	1995	2,365,407	16,674	68.0%	208.6	July	361,826	15.3%	2,257	13.5%	68.5%	233.9	11,672	73	68.5%	233.9
	1996	2,588,715	18,216	68.5%	207.5	August	331,380	12.8%	2,230	12.2%	61.8%	240.3	10,690	72	61.8%	240.3
	1997	2,915,338	19,877	69.5%	211.2	August	356,395	12.2%	2,404	12.1%	63.7%	232.8	11,497	78	63.7%	232.8
	1998	3,302,845	22,675	69.0%	211.1	August	395,583	12.0%	2,718	12.0%	58.2%	250.2	12,761	88	58.2%	250.2
	1999	3,733,512	25,219	67.4%	219.5	August	423,322	11.3%	2,871	11.4%	59.7%	247.0	13,656	93	59.7%	247.0
	2000	4,047,575	27,788	65.9%	221.1	June	473,249	11.7%	2,839	10.2%	66.2%	251.8	15,266	92	66.2%	251.8
2001	3,821,443	26,086	67.2%	218.1	August	401,013	10.5%	2,246	8.6%	71.4%	250.1	12,936	72	71.4%	250.1	
Projected ³	2002	4,453,349	29,183	70.0%	218.0	-	531,548	11.9%	3,350	11.5%	63.9%	248.1	17,147	108	63.9%	248.1
	2003	4,721,342	30,781	70.2%	218.5	-	563,536	11.9%	3,534	11.5%	64.1%	248.6	18,179	114	64.1%	248.6
	2004	5,020,178	32,561	70.4%	219.0	-	599,205	11.9%	3,738	11.5%	64.3%	249.1	19,329	121	64.3%	249.1
	2005	5,328,165	34,304	70.6%	220.0	-	635,966	11.9%	3,938	11.5%	64.6%	250.1	20,515	127	64.6%	250.1
	2006	5,645,302	36,080	70.8%	221.0	-	673,819	11.9%	4,142	11.5%	64.8%	251.1	21,736	134	64.8%	251.1
	2007	5,971,590	37,886	71.0%	222.0	-	712,764	11.9%	4,350	11.5%	65.0%	252.1	22,992	140	65.0%	252.1
	2008	6,309,319	39,737	71.2%	223.0	-	753,075	11.9%	4,562	11.5%	65.2%	253.1	24,293	147	65.2%	253.1
	2009	6,645,331	41,550	71.4%	224.0	-	793,182	11.9%	4,770	11.5%	65.4%	254.1	25,587	154	65.4%	254.1
	2010	6,990,057	43,390	71.6%	225.0	-	834,328	11.9%	4,981	11.5%	65.7%	255.1	26,914	161	65.7%	255.1
	2011	7,343,499	45,255	71.8%	226.0	-	876,514	11.9%	5,196	11.5%	65.9%	256.1	28,275	168	65.9%	256.1
	2012	7,705,655	47,147	72.0%	227.0	-	919,741	11.9%	5,413	11.5%	66.1%	257.1	29,669	175	66.1%	257.1
	2013	7,981,446	48,485	72.2%	228.0	-	952,659	11.9%	5,566	11.5%	66.3%	258.1	30,731	180	66.3%	258.1
	2014	8,261,595	49,830	72.4%	229.0	-	986,098	11.9%	5,721	11.5%	66.5%	259.1	31,810	185	66.5%	259.1
	Projected by Extrapolating the 2001 TAF's	2015	8,546,342	51,182	72.6%	230.0	-	1,020,085	11.9%	5,876	11.5%	66.7%	260.1	32,906	190	66.7%
2016		8,835,982	52,543	72.8%	231.0	-	1,054,656	11.9%	6,032	11.5%	67.0%	261.1	34,021	195	67.0%	261.1
2017		9,129,399	53,905	73.0%	232.0	-	1,089,678	11.9%	6,189	11.5%	67.2%	262.1	35,151	200	67.2%	262.1
2018		9,427,177	55,273	73.2%	233.0	-	1,125,221	11.9%	6,346	11.5%	67.4%	263.1	36,297	205	67.4%	263.1
2019		9,729,317	56,646	73.4%	234.0	-	1,161,284	11.9%	6,503	11.5%	67.6%	264.1	37,461	210	67.6%	264.1
2020		10,035,819	58,024	73.6%	235.0	-	1,197,868	11.9%	6,661	11.5%	67.8%	265.1	38,641	215	67.8%	265.1
2021		10,346,682	59,406	73.8%	236.0	-	1,234,972	11.9%	6,820	11.5%	68.0%	266.1	39,838	220	68.0%	266.1
2022		10,661,907	60,793	74.0%	237.0	-	1,272,597	11.9%	6,979	11.5%	68.3%	267.1	41,052	225	68.3%	267.1

Notes:

- 1 Excludes Canadian activity.
- 2 Historic International Enplanements and Operations: as obtained from the City of Chicago's Department of Aviation Management Records (adjusted to reflect Canadian activity as domestic traffic) or as included in the 2002 Draft FAA Terminal Area Forecasts
Historic Seat Size: as obtained from the FAA 2001 TAF database/DOT T100 Database
Historic Load Factors: Derived by Ricondo & Associates, Inc.
- 3 Projected Load Factors and Seat Size derived by Ricondo & Associates, Inc.
- 4 Historic Peak Month Seat Size was derived using the U.S. DOT Form 41, T100 data for peak month international traffic at ORD. Future peak month seat size projections were derived by applying the average variations in the average annual seat size to the average peak month seat size for the period CY 1996 through CY 2000.

Blue text denotes activity projections beyond the forecast horizon for the 2001 FAA Terminal Area Forecasts.

Sources: 2001 FAA Terminal Area Forecasts; City of Chicago Airport Traffic Statistics; U.S. DOT T100, Form 41 Database; Ricondo & Associates, Inc.

Prepared by: Ricondo & Associates, Inc., February 2003

The resulting peak month international air carrier departure projections are also presented in Table VII-3. As shown, peak month international air carrier departures are projected to grow to approximately 5,700 in 2014 and 6,800 in 2022. In 2001, ORD experienced 2,246 peak month international air carrier departures.

In addition, Table VII-3 presents the PMAD international air carrier departures for the 20-year demand analysis period. Future PMAD departures were derived by dividing the peak month departures by 31. PMAD load factors and average seat size per departure for each year are assumed to be the same as those derived for the peak month the corresponding year. As shown, international PMAD departures are projected to grow to approximately 185 in 2014 and 225 in 2020, in comparison to the 72 international PMAD departures experienced at ORD in 2001.

7.5 Annual All-cargo Operations

All-cargo operations are also expected to grow at ORD as a result of continued growth in population and the socioeconomic conditions in the region. However, since the FAA TAF's do not directly report all-cargo activity within its own category (i.e., projected all-cargo operations are included within the air carrier and commuter/air taxi categories), an estimate on the proportionate share of all-cargo operations contained within these two TAF activity categories had to be derived. The derivation of future all-cargo operations was derived using a trend analysis of historical all-cargo activity at ORD.

The growth patterns projected for annual all-cargo operations at ORD represent a trend analysis from 1996-2001. This near-term trend analysis reflected less aggressive growth patterns in all-cargo aircraft operations in comparison to the 10-year and 20-year trends that were also considered, yet still constitute a reasonable level of growth in future all-cargo operations at ORD. Due to the following reasons, presented in the FAA Aerospace Forecasts for Fiscal Years 2002-2013, the less aggressive five-year growth trend was chosen for the future projections of all-cargo operations at ORD:

- Temporary reductions in air cargo volumes due to weakness in the world economy and temporary schedule reductions by air carriers.
- Efforts by the United States Postal Service (USPS) to shift the delivery of mail from air to ground for markets located within 1,000 miles.

As previously shown in the aircraft operations summary tables, all-cargo operations are projected to grow from 21,105 operations in 2001 to 29,900 operations in 2014 and 33,900 operations in 2022.

7.6 Peak Month and PMAD All-cargo Operations

The annual projections of all-cargo operations were converted into peak month equivalents using historical traffic statistics for the period 1990-2000. The average share of peak month annual all-cargo operations is 8.6 percent for the 11-year period. This share was held constant through the 20-year demand analysis period and used to derive all-cargo peak month operations from 2002 through 2022.

Peak month all-cargo operations are projected to grow to approximately 2,600 in 2014 and 2,900 in 2022. In 2001, ORD experienced 1,847 peak month all-cargo operations. Once again, future PMAD operations were derived by dividing the peak month operations by 31. As such, PMAD all-cargo operations are projected to grow to approximately 83 in 2014 and 94 in 2022. In 2001, ORD experienced 60 PMAD all-cargo operations.

7.7 Annual General Aviation/Miscellaneous and Military Operations

General aviation activity is projected to decrease at ORD, representing less than three percent of the Airport's overall traffic. This decrease is based on the assumption that general aviation activity will naturally relocate to less busy, non-commercial airports in the region. As such, the 2001 TAF projections of annual general aviation activity have been adopted without modification. The 2001 TAF projections assume that general aviation activity will reach a threshold of minimum activity, defined as 24,499 annual operations, and remain at that level throughout the forecast horizon.

The FAA also projected a constant level of military activity, 167 annual operations, throughout the TAF forecast horizon, which have been adopted and extended through 2022 in the OMP demand analysis. The actions taken by Defense Base Closure and Realignment Commission in 1995, which resulted in the deactivation of the 126th Air Refueling Wing, and its subsequent relocation from ORD to Scott Air Force Base in St. Clair County, Illinois have resulted in the significant decrease in military operations at the Airport since 1998.

7.8 Peak Month and PMAD General Aviation/Miscellaneous Operations

The annual projections of general aviation/miscellaneous and military operations were converted into peak month equivalents using historical traffic statistics for the period 1990-2000. The average share of peak month to annual general aviation/miscellaneous operations is 9.7 percent for the 11-year period. The average share of peak month to annual military operations is 11.0 percent for the same period. These shares were held constant through the 20-year demand analysis period and used to derive general aviation/miscellaneous and military peak month operations from 2002 through 2022.

As shown in Table VII-5, peak month general aviation/miscellaneous operations are projected to be less than 2,400 through 2022. In 2001, ORD experienced 2,919 peak month general aviation/miscellaneous. Peak month military operations are projected to be nearly non-existent (18 operations) through 2022. There was no recorded military activity in 2001.

As shown in Table VII-6, general aviation/miscellaneous PMAD operations are projected to be approximately 76 operations from 2002 through 2022. In 2001, ORD experienced 94 general aviation/miscellaneous PMAD operations. Military PMAD operations are projected to be nearly insignificant (less than one daily operation) through 2022.

VIII. Design Day Schedules

For the purposes of identifying future facility requirements, design day activity schedules were developed to represent aircraft movements and passenger traffic distribution throughout the hours of a PMAD. These design day schedules have also been utilized for airfield analyses and simulation modeling, and will serve as sources of information for the ongoing environmental analyses.

The design day schedules are indicative of the flight activity anticipated at the Airport during the PMAD and provide information relative to arrival time, departure time, equipment type, seating capacity, and origin/destination markets for each commercial flight during the design day. A representative airline and/or operator of each flight are also included. **Exhibit VIII-1** below provides a representative sample of the format and data content associated with the design day schedules prepared as part of the OPM Demand Analysis.

Exhibit VIII-1

Sample Design Day Schedule Format

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
	ETD	ACID	Orig	Dest	ETA	AC	TAIL	NUM	Seats	CY2018	LFOs	Flight	F O&D %	O&D	Pass
1															
2		817	R7N633	KORD	KSEA		747	N0187Y							
3			R7N610	KIND	KORD	399	747	N0187Y							
4		1413	R7N633	KORD	KIND		747	N0187Y							
5			R7N633	KIND	KORD	730	747	N0187Y							
6		2028	R7N715	KORD	KHEJ		747	N0237Y							
7			R7N732	KSEA	KORD	1304	747	N0237Y							
8			NAC203	KEWR	KORD	1725	E738	N1000NA							
9		800	AAL380	KORD	KLGA		738	N100AA	154	80%	110	55%	60		
10			AAL301	KLGA	KORD	715	738	N100AA	154	76%	102	55%	66		
11		1550	N100K	KORD	KAR4		L745	N100K							
12			N100K	KSEM	KORD	1545	L745	N100K							
13		710	LAL686	KORD	KLGA		320	N100LA	144	71%	102	55%	67		
14		1000	AAL382	KORD	KLGA		738	N101AA	175	77%	136	44%	60		
15		845	LAL506	KORD	KBOS		320	N101LA	144	77%	111	55%	61		
16			LAL1225	KATL	KORD	759	320	N101LA	144	72%	104	55%	67		
17		385	F01032	KORD	KEWR		A300	N1022PK							
18			F01032	KEWR	KORD	117	A300	N1022PK							
19		1100	AAL378	KORD	KLGA		738	N100AA	154	80%	107	44%	47		
20			AAL378	KMSF	KORD	1015	738	N100AA	154	79%	106	44%	46		
21		1000	LAL680	KORD	KLGA		320	N100LA	144	73%	104	44%	46		
22			LAL680	KCT	KORD	912	320	N100LA	144	78%	113	55%	62		
23		1300	AAL370	KORD	KLGA		738	N100AA	154	86%	118	44%	52		
24			AAL228	KDFW	KORD	1214	738	N100AA	154	80%	123	44%	54		
25		1130	LAL550	KORD	KROC		320	N100LA	144	77%	110	44%	48		
26			LAL1437	KCMH	KORD	1044	320	N100LA	144	75%	109	44%	47		
27		1615	AAL253	KORD	KDAL		738	N100AA	154	81%	109	44%	46		
28			AAL254	KDAL	KORD	1735	738	N100AA	154	83%	111	44%	45		
29		1315	LAL1864	KORD	KPHL		320	N100LA	144	81%	117	44%	51		
30			LAL815	KDCA	KORD	1201	320	N100LA	144	84%	121	44%	53		
31			AAL252	KDAL	KORD	2014	738	N100AA	154	71%	95	44%	42		
32		600	LAL599	KORD	KLGA		320	N100LA	144	68%	98	55%	64		

ETD – Estimated time of departure ACID – Airline/Flight Identification Number
 ORIG – Originating Market (in ICAO designations, with U.S. markets being prefixed with a “K”)
 DEST – Destination Market (in ICAO designations, with U.S. markets being prefixed with a “K”)
 ETA – Estimated time of arrival
 AC – Aircraft Type SEATS – Aircraft Seating Capacity
 TOTAL PAX - Total Passengers O&D – Origin and Destination Passengers

Source: Ricondo & Associates, Inc.

Prepared by: Ricondo & Associates, Inc., February 2003

A total of five design day schedules have been developed for purposes of defining facility requirements for the OMP. The five design day schedules include an existing PMAD schedule, using 2001 as the base year, and four future PMAD schedules of activity. The four future periods chosen for the development of the design day schedules correspond to the years of analysis identified for the OMP’s Environmental Impact Statement (EIS).

The years of analysis were defined in coordination with the FAA based on the anticipated schedule for commissioning of the major components of the OMP. A preliminary commissioning schedule for each of the major components of the OMP has been developed based on the anticipated durations of the various phases and facility development needs.

Based on these preliminary commissioning dates, the years of analysis were defined as 2007, 2009, and 2013. In addition, 2018 was defined as an additional year of analysis representing 5-years after the completion of the OMP. Thus, four future design day schedules were developed, each representing the years of analysis for the EIS (i.e., 2007, 2009, 2013, and 2018). Additional design day schedules were also developed exclusively for the initial simulation analyses and are presented and discussed in the *Airport Layout Plan Update, Airside Simulation Analysis* document dated January 2003.

This section presents the characteristics associated with the five design day schedules discussed above, and the assumptions and methodology used to derive them. It is important to recognize that the design day schedules are foremost a representation of the activity that could be experienced during the specified PMAD in terms of hourly arriving and departing passenger and aircraft operations levels. The design day schedules are also representative of individual carrier activity levels and market service patterns. However, they only represent one of several viable operating characteristics, identified in terms of airline composition, aircraft fleet mix, daily passenger distribution, and passenger types (i.e., domestic versus international, O&D versus connecting).

8.1 Assumptions and Methodology

In order to provide the framework for the development of the design day schedules, the total level of activity for each design day, in terms of aircraft operations, arriving and departing seats, and arriving and departing passengers must be defined. The PMAD passenger and aircraft activity levels for the 20-year demand analysis period were previously presented in the Demand Analysis section. A summary of the PMAD activity associated with the five design day schedules are presented in **Tables VIII-1 and VIII-2**.

Table VIII-1

Design Day Schedule Summary – Scheduled Activity Characteristics

	Peak Month Average Day (PMAD) Activity				
	2001	CY2007	CY2009	CY2013	CY2018
Domestic Activity					
Enplanements	98,765	106,743	111,329	120,535	132,750
Scheduled Aircraft Departures	1,217	1,224	1,250	1,305	1,377
Seats Per Departure	113.5	116.5	118.0	122.0	127.6
Average Boarding Load Factor	71.5%	74.9%	75.5%	75.7%	75.6%
International Activity					
Enplanements	12,936	22,992	25,587	30,731	36,297
Scheduled Aircraft Departures	72	140	154	180	205
Seats Per Departure	250.1	252.1	254.1	258.1	263.1
Average Boarding Load Factor	71.4%	65.0%	65.4%	66.3%	67.4%

Sources: Existing – City of Chicago Airport Traffic Statistics, U.S. DOT T100 Form 41 Database;
Design Day Schedule - Ricondo & Associates, Inc., 2003

Prepared by: Ricondo & Associates, Inc., February 2003

The design day schedules were defined to represent the scheduled and non-scheduled PMAD activity at ORD derived for each of the years of analysis described above. The following methodology was used to develop the design day schedules and to assess the distribution of activity within each design day.

- A schedule of airline activity for August 20, 2001 was obtained from the Official Airline Guide and supplemented with actual data collected from the Airport's Automated RADAR Terminal Systems (ARTS). This day (August 20, 2001) was selected because August represents the common peak month for aircraft operations at ORD. Additional research also found that August 20th was a relatively calm day, without many weather delays being experienced throughout the national airspace system. The August 20, 2001 schedule

Table VIII-2

Passenger Enplanements - Profiles

<u>Demand Element/Characteristics</u>	<u>Actual (2001)</u>	<u>CY2007</u>	<u>CY2009</u>	<u>CY2013</u>	<u>CY2018</u>
<i>Domestic (Air Carrier and Commuter) Enplanements - including enplanements to Canadian destinations</i>					
Total Annual Domestic Enplanements	29,078,666	35,031,876	36,536,831	39,558,106	43,567,049
Total Annual Connecting Enplanements	17,122,735	18,043,195	18,672,176	19,978,852	22,003,572
Percent Connecting (Annual)	58.9% ¹	51.5%	51.1%	50.5%	50.5%
Peak Month Domestic Enplanements	3,061,711	3,309,034	3,451,189	3,736,572	4,115,248
Peak Month (PM) Connecting Enplanements	1,561,333	1,624,000	1,688,000	1,814,000	1,980,000
Ratio of PM Connecting Enplanements to PM Enplanements	51.0% ³	49.1%	48.9%	48.5%	48.1%
<i>International Enplanements - excluding enplanements to Canadian destinations</i>					
Total International Enplanements	4,229,472	5,971,590	6,645,331	7,981,446	9,427,177
Total International Connecting Enplanements	2,292,866	3,582,954	3,987,199	4,788,868	5,774,146
Percent Connecting (Annual)	54.2% ²	60.0%	60.0%	60.0%	61.3%
Peak Month International Enplanements	401,013	712,764	793,182	952,659	1,125,221
Peak Month (PM) International Connecting Enplanements	186,706 ⁷	411,000	459,000	554,000	660,000
Ratio of PM Connecting Enplanements to PM Enplanements	46.6%	57.7%	57.8%	58.2%	58.6%
TOTALS					
Total Annual Enplanements	33,308,138	41,003,466	43,182,162	47,539,553	52,994,226
Total Annual Connecting Enplanements	19,415,601	21,626,149	22,659,374	24,767,720	27,777,718
Ratio of Connecting Enplanements to Annual Enplanements	58.3%	52.7%	52.5%	52.1%	52.4%
Peak Month Enplanements	3,462,724	4,021,798	4,244,370	4,689,231	5,240,468
Peak Month Connecting Enplanements	1,748,039	2,035,000	2,147,000	2,368,000	2,640,000
Ratio of PM Connecting Enplanements to PM Enplanements	50.5% ¹	50.6%	50.6%	50.5%	50.4%

Notes:

¹ Source: U.S. DOT Origin and Destination Survey (O&D survey of originating enplanements, multiplied by 10 and compared against the T100 enplaned passenger volumes)

² Source: 1998 Chicago Airport System Forecasts; Ricondo & Associates, Inc.

³ Derived by maintaining the annual to peak month relationships for total enplanements constant.

⁴ Derived by Ricondo & Associates, Inc. (Derivative Activity Statistics)

⁵ Derived by Ricondo & Associates, Inc.

⁶ Interpolated using 2001 and 2022 demand statistics.

⁷ Total peak month connecting enplanements minus domestic peak month connecting enplanements.

Sources: City of Chicago Airport Traffic Statistics; 2001 FAA Terminal Area Forecasts; *Chicago Airport System Forecast, June 1998*, Ricondo & Associates, Inc.

Prepared by: Ricondo & Associates, Inc., February 2003

reflected a total of 2,802 scheduled and non-scheduled flight operations, in comparison to the 2,732 total daily operations derived for the 2001 PMAD. However, actual activity for August 20, 2001 as reflected by AARTS indicate that only 2,745 total operations actually materialized, due to flight cancellations and other factors that led to the non-occurrence of flights scheduled for that day.

- A pre-September 11, 2001 flight schedule was selected to derive the future design day schedules following group discussions during Airside Advisory Sessions held early in the planning process and attended by members of the DOA, FAA, IDOT, airlines, and the planning team. Although several airlines have altered their daily schedules to reflect a more even distribution of traffic throughout the day, it was concluded that the pre-September 2001 daily activity profiles still represent valid daily traffic distributions and peaking patterns for long-term (10+ years) planning purposes. As such, the compiled August 20, 2001 schedule provides a reasonable baseline for the development of the future activity schedules and operating profiles throughout the day.
- The future schedules of airline activity were prepared assuming that the market shares retained by airlines at ORD from September 2000 through August 2001 remain constant through each of four future design day schedules. Consideration was also given for those airlines that held a small percentage (i.e., less than five percent) of the market share during the 2000/2001 period, but have since ceased operations. It was assumed that market share possessed by these carriers would be absorbed by other existing or new entrant carriers. Similarly, activity conducted by airlines that have been acquired during or after the 2000/2001 period (e.g. TWA) was included within the parent company.
- Each existing airline/market pair was assessed relative to arrival and departure times, frequency levels, passenger demand, and historical load factors. Based on the overall flights in the market and the relative O&D traffic levels, additional flights were added to service “gaps” apparent in the schedule. In addition, airline’s overall route structures were evaluated to identify markets that provided logical targets for service from ORD for each representative carrier. Arrival and departure times from/to these markets were established based on preferred travel times in the market pair. New international air service markets were also identified for ORD after increase service frequencies to existing international markets were provided. New international markets were identified using information contained in the *International Air Services for Chicago, Market Opportunities and Strategies* technical report, dated April 1998. Further discussion on the approach used to build up the August 20, 2001 schedule to reflect future PMAD activity levels is provided in the following section.
- An aircraft type was assigned to each new and existing flight based on the representative airline’s existing and planned fleet, market frequency, stage length, and anticipated growth in overall seats per operation. Taking into consideration stage length requirements to each market and each airline’s current and future operating fleets, the PMAD average seat size for domestic and international activity were used to calibrate the overall fleet mix for each of the design day schedules. Airline fleet information was obtained from JP Airline Fleets International, the Official Airline Guide, and order/delivery records available from the Boeing and Airbus Industries web sites.
- Load factors were assigned to each flight in order to derive passenger activity volumes. Future assumptions on airline load factors were made using historical data obtained from the U.S. DOT, T-100, Form 41 database, actual hourly load factors for ORD for August 20, 2001 obtained from some of the existing carriers, and detailed traffic statistics for August 2001

obtained from the City. Taking into consideration historical load factors and assumed changes or upgrades in aircraft size, load factors were applied to each flight and adjusted by representative airline. Adjustments to load factors were made in order to calibrate passenger volumes based on the PMAD domestic and international passenger enplanements derived for each of the four years of analysis.

The following sections further address the assumptions and methodology used to derive the future demand patterns.

8.2 Future Domestic Flight Activity

Table VIII-3 provides a breakdown of the PMAD domestic departures by representative airline, derived using the average airline departures market share at ORD from September 2000-August 2001. As shown, United and American possess the largest domestic departure market share at 35 percent and 27 percent respectively. United Express, which comprised activity by Air Wisconsin, Atlantic Coast, and Great Lakes Airlines during the 2000/2001 period provided approximately 13 percent of the Airport's domestic departures. American Eagle contributed slightly less than 13 percent of ORD's domestic departures. Each of the other remaining carriers provided less than 2.5 percent of the domestic departures at the Airport.

These market shares were assumed to remain constant throughout the 20-year demand analysis period and used to allocate the PMAD domestic departures associated with each of the four design day schedules to various representative airlines. PMAD activity for 2001 was derived from the City's Airport Traffic Statistics.

As shown in Table VIII-3, the PMAD domestic departures for 2001 total 1,217. The PMAD total domestic departures increase incrementally from 1,224 in 2007 to 1,250 in 2009. In 2013, PMAD total domestic departures grow to 1,305 and culminate at 1,377 in 2018. This represents an average annual growth of less than one percent from 2001 through 2018.

The future activity volumes projected for the hubbing carrier's commuter affiliates (e.g. United Express and American Eagle) are based, as stated previously, on the average market shares held by these carriers from September 2000 through August 2001. However, based on the volume of activity conducted by these two carriers in August 2001 (which was used to derive the 2001 PMAD flight distributions), it is apparent that the mainline carriers had already begun increased reliance on the regional/commuter partners to serve the lower demand and/or regional markets, without reducing frequencies. Both United Express and American Eagle held higher market shares in August 2001 than they did, on average, between September 2000 and August 2001.

To derive each of the design day schedules using the PMAD departure totals and airline traffic shares presented in Table VIII-3, the August 20, 2001 flight schedule obtained from the Official Airline Guide (OAG) was revised and amended to reflect the departure volumes and operating profiles (in terms of average seat size per departure) for each year of analysis (i.e., 2007, 2009, 2013, and 2018). New flights were added as needed on a carrier-by-carrier basis for each representative airline. All flights (existing and new) contained in the design day schedule possesses an alpha-numeric identifier. The three letter codes contained in this identifier correspond to the representative airline's/operator's three-letter ICAO designation (e.g. AAL represents American, UAL represents United, MXA represents Mexicana, BAW represents British Airways, etc.). The remaining numeric codes correspond to the flight number associated with each departure or arrival.

Table VIII-3

Design Day Schedule (2001 TAF Derivative Profiles) - Domestic Activity Flight Distribution

Representative Air Carrier	Identifier	PMAD	FY 00/01	CY2007 - PMAD	CY2009 - PMAD	CY2013 - PMAD	CY2018 - PMAD
		2001	Market Share ^{1/}	Total Departures	Total Departures	Total Departures	Total Departures
UNITED	UA	405	34.7%	425	434	453	477
AMERICAN ⁴	AA	324	27.5%	336	344	358	379
UNITED EXPRESS	ZW/DH/ZK	169	13.2%	162	166	172	181
AMERICAN EAGLE	MQ	164	12.7%	155	159	166	175
NORTHWEST	NW	27	2.2%	27	27	29	30
DELTA/COMAIR	DL	31	2.2%	27	27	29	30
U.S. AIR	AL	21	1.8%	22	22	23	25
AIR CANADA	AC	23	1.7%	21	21	22	23
CONTINENTAL/CO EXPRESS	CO	25	1.8%	22	22	23	25
OTHERS ^{3/}	-	27	2.2%	27	28	30	32
TOTAL ^{2/}		1,217	100.0%	1224	1250	1305	1377

^{1/} Reflects scheduled and non-scheduled activity^{2/} Express One not included. Totals may not add due to rounding.^{3/} Other carriers operating in 2001 included: Alaska Airlines, America West, Canada International, Mesa Airlines, National Air, Spirit, Sun Country, Trans World Airlines, and Transmeridian^{4/} Includes TWA share during 2000/2001.

Sources: City of Chicago, Airport Activity Statistics; Ricondo & Associates, Inc.

Prepared by: Ricondo & Associates, Inc., February 2003

The new domestic flights were added to each representative carrier based on existing service routes to and from ORD, flight frequencies maintained to each of the existing markets during 2001 as well as those provided during 2002 (based on a review of other OAG flight schedules obtained for different periods in 2002). In addition, each representative carrier's service patterns and flight frequencies between ORD and their respective airport hub-network was evaluated, particularly given the representative airline's current operating trends. These trends appear to emphasize the increased utilization of existing hubs to maximize market accessibility via one-stop or multi-stop routing strategies. Providing additional flight frequencies to the existing network of hubs received first priority during the addition of flights to the design day schedules.

As such, Dallas-Ft. Worth and Miami received some new American Flights. San Francisco and Denver received some new United flights. Atlanta and Cincinnati received new Delta flights. In addition, new flights to Atlanta were provided for American and United, reflecting the airlines increased frequencies to this market in 2002. For the same reason, additional flights to Dallas-Ft. Worth were added for United. **Table VIII-4** provides a summary of the domestic market frequencies and new service markets associated with the future design day schedules.

8.3 Future International Flight Activity

Table VIII-5 provides a breakdown of the PMAD international departures by representative airline, also derived using the average airline departures market share held by those carriers at ORD from September 2000-August 2001. These market shares were assumed to remain constant throughout the 20-year demand analysis period and used to allocate the future PMAD international departures to each of the representative airlines providing international air service.

As shown in Table VIII-5, the PMAD international departures for 2001 total 72. Based on the increased growth in international service at the Airport, more aggressive growth (in terms of growth percentage increases) in annual and PMAD departures is anticipated. Total international PMAD departures increase incrementally from 140 in 2007 to 154 in 2009. In 2013, total PMAD international departures grow to 180 and reach 205 daily departures in 2018. This represents an average annual growth of 6.3 percent from 2001 through 2018.

New international flights were added to each representative carrier based on existing service routes to and from ORD, and flight frequencies maintained to each of the existing international markets during 2001 as well as those provided during 2002 (based on a review of other OAG flight schedules obtained for different periods in 2002). In addition, international markets that could support new service from ORD were identified based on the international air service priorities outlined in the *International Air Services for Chicago, Market Priorities and Strategies* study completed in April 1998. The study assessed air service patterns and opportunities for European, Asian, and Latin America/Caribbean markets. The European markets included Belgium, France, Germany, Greece, Ireland, Italy, Netherlands, Poland, Scandinavia, Spain, Portugal, Switzerland, the United Kingdom, Eastern Europe, and the Middle East. The Asian markets included Japan, Korea, China, the Philippines, Hong Kong, Taiwan, Singapore/Malaysia, and other Pacific rim markets. The Latin America/Caribbean markets included cities in South and Central America, Mexico, and the Caribbean islands.

The study concluded that future growth opportunities for international air service to/from ORD existed primarily within the European and Asian markets, with some additional opportunities

Table VIII-4

O'Hare International Airport - Design Day Schedules - Summary of Domestic Markets

Markets	ICAO	Number of Flights									
		August 20, 2001		PMAD CY2007		PMAD CY2009		PMAD CY2013		PMAD CY2018	
		Arrivals	Departures	Arrivals	Departures	Arrivals	Departures	Arrivals	Departures	Arrivals	Departures
Domestic											
OTTAWA ONTARIO CANADA	CYOW	8	8	8	11	8	11	7	10	9	11
MONTREAL(DORVAL) QUEBEC CANADA	CYUL	10	10	13	15	15	15	14	16	14	16
VANCOUVER(INTL) BC CANADA	CYVR	5	5	6	7	7	9	7	10	9	11
WINNIPEG MANITOBA CANADA	CYWG	4	4	4	3	4	3	4	3	4	4
CALGARY ALBERTA CANADA	CYYC	4	4	3	4	3	4	5	5	6	6
TORONTO(PEARSON INTL) ONTARIO CANADA	CYYZ	21	21	23	26	23	26	24	26	25	26
ALLETOWN PENNSYLVANIA USA	KABE	4	3	4	3	4	3	4	3	4	3
ALBUQUERQUE NEW MEXICO USA	KABQ	2	2	3	2	3	2	2	2	2	2
ATLANTIC CITY(INTL) NJ USA	KACY	1	1	1	1	1	1	1	1	1	1
ALBANY NEW YORK USA	KALB	8	8	8	8	9	8	9	9	10	10
WATERLOO IOWA USA	KALO	5	5	4	4	4	4	4	4	4	5
ATLANTA(INTL) GEORGIA USA	KATL	28	28	28	28	28	29	29	31	30	31
APPLETON WISCONSIN USA	KATW	6	6	6	6	6	6	6	6	6	6
AUSTIN(INTL) TEXAS USA	KAUS	8	8	8	7	9	8	9	8	9	9
WILKES-BARRE/SCRANTON PA USA	KAVP	3	3	1	2	1	2	3	2	3	2
KALAMAZOO MICHIGAN USA	KAZO	10	10	8	9	8	9	9	10	9	10
HARTFORD(BRADLEY INTL) CT USA	KBDL	12	12	12	11	12	12	13	12	14	13
BIRMINGHAM ALABAMA USA	KBHM	2	2	2	2	2	2	2	2	2	2
BLOOMINGTON ILLINOIS USA	KBMI	8	8	7	8	7	8	7	8	8	8
NASHVILLE TENNESSEE USA	KBNA	8	8	7	7	7	8	9	9	9	9
BOISE IDAHO USA	KBOI	2	2	2	2	2	2	2	2	2	2
BOSTON(INTL) MASSACHUSETTS USA	KBOS	29	28	30	28	30	28	29	29	31	30
BATON ROUGE LOUISIANA USA	KBTR	2	2	2	1	2	2	2	2	2	2
BURLINGTON VERMONT USA	KBTV	3	3	4	3	4	3	4	3	4	3
BUFFALO NEW YORK USA	KBUF	9	10	9	10	9	10	9	10	9	10
BALTIMORE(INTL) MARYLAND USA	KBWI	11	11	11	11	11	12	12	12	12	12
COLUMBIA SOUTH CAROLINA USA	KCAE	3	3	2	3	2	3	3	3	4	3
AKRON/CANTON OHIO USA	KCAK	3	3	3	3	3	3	2	3	2	3
CHATTANOOGA TENNESSEE USA	KCHA	4	3	3	2	3	2	3	3	3	3
CHARLESTON SOUTH CAROLINA USA	KCHS	2	2	2	1	2	1	2	1	2	1
CEDAR RAPIDS/IOWA CITY IOWA USA	KCID	10	10	9	10	9	10	10	10	10	10
CLEVELAND(INTL) OHIO USA	KCLE	23	23	20	20	21	20	21	22	24	25
CHARLOTTE NORTH CAROLINA USA	KCLT	19	19	19	18	20	18	21	18	21	20
COLUMBUS(INTL) OHIO USA	KCMH	19	20	18	20	18	20	14	15	14	16
CHAMPAIGN ILLINOIS USA	KCMI	5	5	4	4	4	5	4	5	5	5
COLORADO SPRINGS COLORADO USA	KCOS	2	2	2	2	2	2	2	2	2	2
CHARLESTON WEST VIRGINIA USA	KCRW	3	3	3	3	3	3	3	3	3	3
CINCINNATI(INTL) OHIO USA	KCVG	19	19	15	16	16	17	16	17	19	19
WAUSAU WISCONSIN USA	KCWA	6	6	5	4	5	4	6	5	6	5
DALLAS(LOVE FLD) TEXAS USA	KDAL	4	4	4	4	4	4	4	4	4	4
DAYTON(INTL) OHIO USA	KDAY	10	10	8	10	8	10	8	10	9	10
DBQ-DUBUQUE IOWA USA	KDBQ	7	7	5	6	5	6	5	6	7	7
WASHINGTON (REAGAN NAT'L) DC USA	KDCA	26	26	29	26	29	26	28	28	29	28
DENVER(INTL) COLORADO USA	KDEN	27	23	25	23	25	24	27	24	29	26
DALLAS/FT. WORTH(INTL) TEXAS USA	KDFW	33	33	33	34	34	36	33	37	36	37
DULUTH MN/SUPERIOR WI USA	KDLH	3	3	2	3	2	3	2	3	2	3
DES MOINES IOWA USA	KDSM	11	12	10	10	10	11	10	11	10	11
DETROIT(METRO WAYNE) MICHIGAN USA	KDTW	24	25	22	24	23	24	25	24	26	26
EL PASO TEXAS USA	KELP	3	3	2	3	2	3	3	3	3	3
EVANSVILLE INDIANA USA	KEVV	5	5	4	4	4	4	5	4	5	4
NEW YORK(NEWARK NJ) NY USA	KEWR	40	38	38	36	38	36	40	39	41	39
FARGO NORTH DAKOTA USA	KFAR	3	3	2	3	3	3	3	3	3	3
FT. LAUDERDALE(INTL) FLORIDA USA	KFLL	9	9	8	9	8	9	9	9	9	10

Table VIII-4

O'Hare International Airport - Design Day Schedules - Summary of Domestic Markets

Markets	ICAO	Number of Flights									
		August 20, 2001		PMAD CY2007		PMAD CY2009		PMAD CY2013		PMAD CY2018	
		Arrivals	Departures	Arrivals	Departures	Arrivals	Departures	Arrivals	Departures	Arrivals	Departures
SIoux FALLS SOUTH DAKOTA USA	KFSD	5	5	3	4	3	4	3	4	3	4
FORT WAYNE INDIANA USA	KFWA	10	10	7	6	7	6	9	7	10	9
SPOKANE(INTL) WASH. USA	KGEG	2	2	2	2	2	2	2	2	2	2
GREEN BAY WISCONSIN USA	KGRB	11	10	10	9	10	9	10	9	11	10
GRR-GRAND RAPIDS MICHIGAN USA	KGRR	15	15	15	14	15	14	15	14	16	16
GREENSBORO/H.PTWIN-SALEM NC USA	KGSO	6	6	6	6	6	6	6	6	6	6
GREENVILLE/SPARTANBURG SC USA	KGSP	7	7	7	5	7	5	7	7	7	7
WESTCHESTER COUNTY NEW YORK USA	KHPN	12	12	11	11	11	12	12	12	12	12
HUNTSVILLE (INTL) ALABAMA USA	KHSV	3	3	2		3		3	1	3	3
WASHINGTON(DULLES INTL) DC USA	KIAD	9	9	8	9	8	10	11	12	12	12
HOUSTON(INTL) TEXAS USA	KIAH	20	20	20	20	20	20	20	20	20	20
WICHITA KANSAS USA	KICT	3	3	3	3	3	3	3	3	3	3
WILMINGTON OHIO USA	KILN	0	0							3	3
IRON MOUNTAIN MICHIGAN USA	KIMT	3	3	2	3	3	3	3	3	17	16
INDIANAPOLIS INDIANA USA	KIND	16	16	16	16	16	16	17	16		
JACKSONVILLE(INTL) FLORIDA USA	KJAX	3	3	2	3	2	3	2	3	2	3
NEW YORK(KENNEDY) NY USA	KJFK	1	2	1	1	1	1	1	1	1	2
LANSING MICHIGAN USA	KLAN	8	8	6	6	6	6	6	7	6	7
LAS VEGAS(INTL) NEVADA USA	KLAS	14	14	16	14	16	14	16	16	18	18
LOS ANGELES(INTL) CALIFORNIA USA	KLAX	34	33	35	34	36	35	40	38	41	38
LEXINGTON KENTUCKY USA	KLEX	3	3	3	3	3	3	3	3	3	3
NEW YORK(LAGUARDIA) NY USA	KLGA	38	37	37	36	38	36	39	38	39	40
LITTLE ROCK ARKANSAS USA	KLIT	3	3	3	3	3	3	3	3	3	3
LINCOLN NEBRASKA USA	KLNK	3	3	3	3	3	3	3	3	3	3
LA CROSSE WIWINONA MN USA	KLSE	4	4	4	4	4	4	4	4	4	4
SAGINAW MICHIGAN USA	KMBS	5	5	5	4	5	4	5	5	5	5
KANSAS CITY(INTL) MISSOURI USA	KMCI	13	14	13	14	13	14	13	14	14	15
ORLANDO(INTL) FLORIDA USA	KMCO	13	14	13	11	11	9	15	13	17	17
HARRISBURG PENNSYLVANIA USA	KMDT	7	8	7	7	7	7	7	8	7	8
MEMPHIS TENNESSEE USA	KMEM	13	13	12	12	12	13	12	14	12	14
MANCHESTER NEW HAMPSHIRE USA	KMHT	4	3	6	3	6	3	5	3	5	3
MIAMI(INTL) FLORIDA USA	KMIA	12	12	12	12	12	13	16	15	16	17
MILWAUKEE WISCONSIN USA	KMKE	15	16	13	16	15	16	15	16	15	16
MUSKEGON MICHIGAN USA	KMKG	4	4	3	3	3	4	3	4	4	4
MOLINE ILLINOIS USA	KMLI	5	5	4	4	4	5	4	5	4	5
MOBILE AL/PASCAGOULA MS USA	KMOB	2	2	2	2	2	2	1	2	1	2
MARQUETTE MICHIGAN USA	KMQT	1	1	1	1	1	1	1	1	1	1
MADISON(DANE COUNTY) WISCONSIN USA	KMSN	15	15	11	13	12	14	14	14	15	14
MINNEAPOLIS/ST. PAUL(INTL) MN USA	KMSP	42	42	39	40	41	41	43	43	44	44
NEW ORLEANS(INTL) LOUISIANA USA	KMSY	5	5	5	5	5	5	5	5	6	5
MYRTLE BEACH SOUTH CAROLINA USA	KMYR	1	1		1		1		1	1	1
OAKLAND CALIFORNIA USA	KOAK	4	4	4	4	5	4	5	4	6	4
OKLAHOMA CITY(ROGERS) OKLAHAMA USA	KOKC	6	6	5	6	5	6	6	6	6	6
OMAHA NEBRASKA USA	KOMA	10	11	10	11	10	11	10	10	10	11
ONTARIO CALIFORNIA USA	KONT	2	2	2	2	2	2	2	2	3	2
NORFOLK/WA. BEACH/WMBG VA USA	KORF	6	6	6	5	6	5	7	5	8	6
WORCESTER MASSACHUSETTS USA	KORH	2	2	2	2	2	2	2	2	2	2
OSHKOSH WISCONSIN USA	KOSH	2	2	2	1	2	1	2	1	2	1
WEST PALM BEACH(INTL) FLORIDA USA	KPBI	1	1	2	1	2	1	3	1	4	2
PORTLAND OREGON USA	KPDX	9	8	10	8	10	8	10	8	11	10
PHILADELPHIA(INTL) PA USA	KPHL	30	31	30	29	31	30	31	30	32	31
PHOENIX(INTL) ARIZONA	KPHX	17	16	16	15	17	16	16	16	21	20
PEORIA ILLINOIS USA	KPIA	9	9	9	8	9	8	9	8	9	9
PITTSBURGH(INTL) PENN USA	KPIT	19	19	17	18	17	19	17	19	20	20

Table VIII-4

O'Hare International Airport - Design Day Schedules - Summary of Domestic Markets

Markets	ICAO	Number of Flights									
		August 20, 2001		PMAD CY2007		PMAD CY2009		PMAD CY2013		PMAD CY2018	
		Arrivals	Departures	Arrivals	Departures	Arrivals	Departures	Arrivals	Departures	Arrivals	Departures
PALM SPRINGS CALIFORNIA	KPSP	0		1		1		1	1	1	1
PROVIDENCE RHODE ISLAND USA	KPVD	8	8	7	7	8	7	8	8	9	9
PORTLAND MAINE USA	KPWM	4	5	4	4	4	4	4	5	4	5
RALEIGH/DURHAM NORTH CAROLINA USA	KRDU	11	11	11	11	11	11	11	11	12	11
ROCKFORD ILLINOIS USA	KRFD	0	0								
RICHMOND/WMBG VIRGINIA USA	KRIC	7	7	7	7	7	7	7	7	7	7
RENO NEVADA USA	KRNO	3	3	3	3	3	3	3	3	4	4
ROANOKE VIRGINIA USA	KROA	3	3	3	2	3	2	3	3	3	3
ROCHESTER NEW YORK USA	KROC	11	10	11	10	11	10	11	10	11	10
ROCHESTER MINNESOTA USA	KRST	4	4	4	3	4	3	4	4	4	4
FORT MYERS FLORIDA USA	KRSW	2	2	4	1	4	1	3	1	3	3
SAN DIEGO(INT'L) CALIFORNIA USA	KSAN	11	11	11	10	11	10	12	11	12	12
SAN ANTONIO TEXAS USA	KSAT	6	6	6	6	6	6	6	6	6	6
SAVANNAH GEORGIA USA	KSAV	3	3	3	3	3	3	3	3	3	3
SOUTH BEND(REGIONAL) INDIANA USA	KSBN	8	9	7	8	7	8	7	9	7	9
LOUISVILLE KENTUCKY USA	KSDF	4	4	4	4	4	4	4	4	4	4
SEATTLE/TACOMA(INT'L) WA USA	KSEA	17	17	16	17	16	17	20	19	20	19
SAN FRANCISCO(INT'L) CALIFORNIA USA	KSFO	22	25	21	25	23	25	23	27	24	28
SPRINGFIELD MISSOURI USA	KSGF	4	4	4	2	4	2	3	3	4	3
SAN JOSE CALIFORNIA USA	KSJG	14	13	14	12	14	12	15	13	15	14
SALT LAKE CITY UTAH USA	KSLC	8	8	7	7	7	7	7	7	9	9
SACRAMENTO(METRO) CA. USA	KSMF	4	5	4	5	4	5	4	5	4	5
ORANGE CTY.(J.WAYNE APT) CA. USA	KSNA	11	11	9	9	9	10	11	11	11	11
SPRINGFIELD ILLINOIS USA	KSPI	6	6	3	2	3	2	4	3	6	5
ST. LOUIS(INT'L) MISSOURI USA	KSTL	21	21	19	20	19	20	20	20	25	23
NEWBURGH NEW YORK USA	KSWF	4	4	4	2	4	3	4	4	4	4
SYRACUSE NEW YORK USA	KSYR	7	7	7	7	7	7	7	7	7	7
TOLEDO OHIO USA	KTOL	6	6	5	5	5	5	5	6	6	6
TAMPA(INT'L) FLORIDA USA	KTPA	7	7	6	7	7	7	7	7	9	8
TRI-CITY AIRPORT TENNESSEE USA	KTRI	3	3	3	2	3	2	3	2	3	3
TULSA OKLAHOMA USA	KTUL	9	9	9	9	9	9	9	9	9	9
TUCSON ARIZONA USA	KTUS	3	3	3	3	3	3	3	3	3	3
TRAVERSE CITY MICHIGAN USA	KTVC	11	11	9	9	9	9	11	9	11	10
KNOXVILLE TENNESSEE USA	KTYS	3	3	3	3	3	3	3	3	3	3
QUINCY ILLINOIS USA	KUIN	2	2	2	1	2	1	2	2	2	2
FAYETTEVILLE ARKANSAS USA	KXNA	5	5	5	5	5	5	5	5	5	5
Total		1,295	1,295	1,233	1,224	1,258	1,250	1,305	1,305	1,382	1,377

Sources: Official Airline Guide; Ricondo & Associates, Inc.

Prepared by: Ricondo & Associates, Inc., February 2003

Table VIII-5

Design Day Schedule (2001 TAF Derivative Profiles) - International Activity Flight Distribution

Representative Air Carrier	Identifier	Alliance	PMAD	FY 00/01	CY2007 - PMAD	CY2009 - PMAD	CY2013 - PMAD	CY2018 - PMAD
			2001	Market Share ^{1/}	Total Departures	Total Departures	Total Departures	Total Departures
AMERICAN	AA	One World	19	27.7%	39	43	50	57
UNITED	UA	Star	12	23.7%	33	36	43	49
MEXICANA	MX	None	8	9.4%	13	14	17	19
LUFTHANSA	LH	Star	3	3.1%	4	5	6	6
KOREAN	KE	None	2	2.9%	4	4	5	6
JAPAN AIRLINES	JL	One World	2	2.8%	4	4	5	6
AIR FRANCE	AF	None	2	2.6%	4	4	5	5
BRITISH AIRWAYS	BA	One World	2	2.4%	3	4	4	5
SCANDINAVIAN	SK	Star	2	2.4%	3	4	4	5
OTHERS ^{2/}	-	-	19	14.4%	33	36	41	47
TOTAL			72	100.0%	140	154	180	205

Totals may not add due to rounding.

^{1/} Reflects scheduled and non-scheduled activity^{2/} Other carriers operating in 2001 included: Turkish Airlines, Air India, Aeroflot, Allegro Air, Royal Jordanian, Aeromexico, Kuwait Airways, El Al, Tarom, British Midland, Airplus Comet, Singapore Passenger Airlines, All Nippon Airways, KLM, Air Jamaica, Sabena, Iberia, Virgin Atlantic, American Trans Air, Swissair and Austrian Air

Sources: City of Chicago, Airport Activity Statistics; Ricondo & Associates, Inc.

Prepared by: Ricondo & Associates, Inc., February 2003

available for a few select cities in Latin America. A summary of the specific markets outlined in the study is provided in **Table VIII-6**.

Several of these markets were considered and included as new service markets within the future design day schedules. Additional flight frequencies to some of the existing international markets already being served from ORD were also provided.

Table VIII-6

International Market Priorities

Hong Kong	Singapore
Taipei	Nagoya
Rome	Japanese markets (in general)
Reykjavik	London
San Jose, Costa Rica	Amsterdam
Athens	Beijing/Shanghai
Belgrade	Berlin
Brussels	Budapest
Caracas	Caribbean markets (non-specific)
Kuala Lumpur	Luxembourg
Madrid	Manila
Santiago, Chile	Seoul

Source: International Air Services for Chicago, Market Priorities and Strategies, Technical Report dated April 1998
Prepared by: Ricondo & Associates, Inc., February 2003

Table VIII-7 provides a summary of the international market frequencies and new service markets associated with each of the five PMAD design day schedules. Similarly, **Exhibit VIII-2** provides a graphical depiction of the future distribution of international service among the primary world regions discussed above. As shown, Europe is currently the world region that received the majority of the international traffic to/from ORD. This pattern is assumed to continue in the future, along with significant growth in air service to the Asian markets.

8.4 Calibration Of The Design Day Schedules

Each of the future design day schedules was calibrated using the PMAD information derived from the 2001 TAF's. For calibration purposes, domestic and international design day schedules were developed for each of the years of analysis and later merged together. The calibration of these design day schedules was completed using the average aircraft seat capacity for the PMAD in each given year as well as the PMAD departures, enplaned passengers, and connecting passenger percentages derived for each year.

The utilization of the PMAD departures and average aircraft seating capacity allowed for the calibration of future daily aircraft volumes and fleet mix associated with each of the design day schedules. As stated above, market stage lengths, airline fleet inventories, and aircraft purchase patterns unique to each representative airline were considered as fleet upgrades/substitutions were made to achieve an average aircraft seat size for the overall schedule that equated the derived PMAD average aircraft seating capacity.

Passenger volumes for each of the design day schedules were also derived and calibrated using the PMAD domestic and international passenger enplanements. To derive these passenger volumes, hourly load factors for departures and arrivals (associated with August 20, 2001 and July 22, 2002)

Table VIII-7

O'Hare International Airport - Design Day Schedules - Summary of International Markets

Markets	ICAO	Number of Flights									
		August 20, 2001		PMAD CY2007		PMAD CY2009		PMAD CY2013		PMAD CY2018	
		Arrivals	Departures	Arrivals	Departures	Arrivals	Departures	Arrivals	Departures	Arrivals	Departures
International											
SYDNEY AUSTRALIA	ASSY	0	0	1	1	1	1	1	1	1	1
REYKYAVIK ICELAND	BIRK	0	0							1	1
BRUSSELS BELGIUM	EBBR	2	2	4	4	4	5	5	5	6	6
BERLIN GERMANY	EDBT	0	0					1	1	1	1
FRANKFURT GERMANY	EDDF	5	5	8	10	10	10	10	10	10	10
DUSSELDORF GERMANY	EDDL	1	1	2	2	2	2	2	2	2	2
MUNICH GERMANY	EDDM	1	1	2	2	3	3	4	4	4	4
STUTTGART GERMANY	EDDS	0	0							1	1
HENSINKI JAPAN	EFHK	0	0			1	1	1	1	1	1
BIRMINGHAM UK	EGBB	1	1	1	2	1	2	1	2	2	2
MANCHESTER UK	EGCC	2	2	3	3	3	3	3	3	3	3
LONDON (GATWICK) ENGLAND	EGKK	0	0	1	1	2	2	2	2	2	2
HEATHROW UK	EGLL	11	11	13	13	15	15	15	16	15	16
GLASGOW UK	EGPF	1	1	1	2	2	2	2	2	2	2
AMSTERDAM NETHERLANDS	EHAM	3	3	7	9	7	9	8	9	9	9
IRISH REPUBLIC	EIDW	1	1	2	2	2	2	3	3	3	3
SHANNON IRISH REPUBLIC	EINN	1	1	2	2	2	2	2	2	2	2
COPENHAGEN DENMARK	EKCH	1	1	2	2	2	2	2	2	2	2
OSLO	ENFB	0	0							1	1
WARSHAW POLAN	EPWA	1	1	2	2	2	2	3	3	3	3
STOCKHOLM (ARLANDA) SWEDEN	ESSA	2	2	3	3	3	3	3	3	3	3
NAIROBE KENYA	HKNA	0	0							1	1
BARCELONA SPAIN	LEBL	0	0								
MADRID SPAIN	LEMD	1	1	2	2	2	3	3	3	4	4
LYON FRANCE	LFLL	0	0								
NICE FRANCE	LFMN	0	0	1	1	1	1	2	1	2	2
PARIS FRANCE	LFPG	4	4	8	7	8	7	9	9	10	9
PARIS (ORLY) FRANCE	LFPO	0	0						1		1
BUDAPEST HUNGARY	LHBP	0	0							1	1
MILAN ITALY	LIMC	2	2	4	4	4	4	4	4	4	4
ROME ITALY	LIRF	1	1	4	3	5	3	5	5	5	5
TEL AVIV ISRAEL	LLBG	0	0	1	1	1	1	1	1	1	1
VIENNA AUSTRIA	LOWW	1	1	1	1	1	1	1	1	1	1
GENEVA SWITZERLAND	LSGG	0	0					1		1	1
ZURICH SWITZERLAND	LSZH	2	2	3	3	3	3	3	3	4	4
ISTANBUL TURKEY	LTBA	1	1	1	1	1	1	1	1	1	1
BELGRADE YUGOSLAVIA	LVBE	0	0							1	1
GUATEMALA CITY GUATEMALA	MGGT	0	0								
MONTEGO BAY JAMAICA	MKJS	1	1	2	2	2	2	2	2	2	2
MEXICO MARKET (DGO)	MMDO	0	1		3		3	1	3	2	3
GUADALAJARA MEXICO	MMGL	1	2	1	2	1	3	2	3	2	3
MOREIA MEXICO	MMMM	1	1	2	3	2	3	3	3	3	3
MEXICO CITY MEXICO	MMMX	5	6	5	7	6	8	8	8	9	10
MONTEREY MEXICO	MMMY	2	2	3	2	3	2	4	3	4	4
PUERTO VALLARTA MEXICO	MMPR	1	0	3	3			3	2	3	2
CANCUN MEXICO	MMUN	0	0							1	1
MEXICO MARKET (ZCL)	MMZC	1	0	1		1		3	1	3	1
SAN JOSE COSTA RICA	MROC	0	0	1		1	1	2	2	2	3
FREEPORT BAHAMAS	MYGF	0	0					1		1	1
ANCHORAGE ALASKA	PANC	3	3	3	4	3	4	4	4	4	4
HONOLULU HAWAII	PHNL	1	1	2	1	2	1	2	1	2	2
TAIPEI TAIWAN	RCTP	0	0	1	1	1	1	1	2	1	2
TOKYO JAPAN	RJAA	5	5	8	10	9	10	10	11	10	11

Table VIII-7

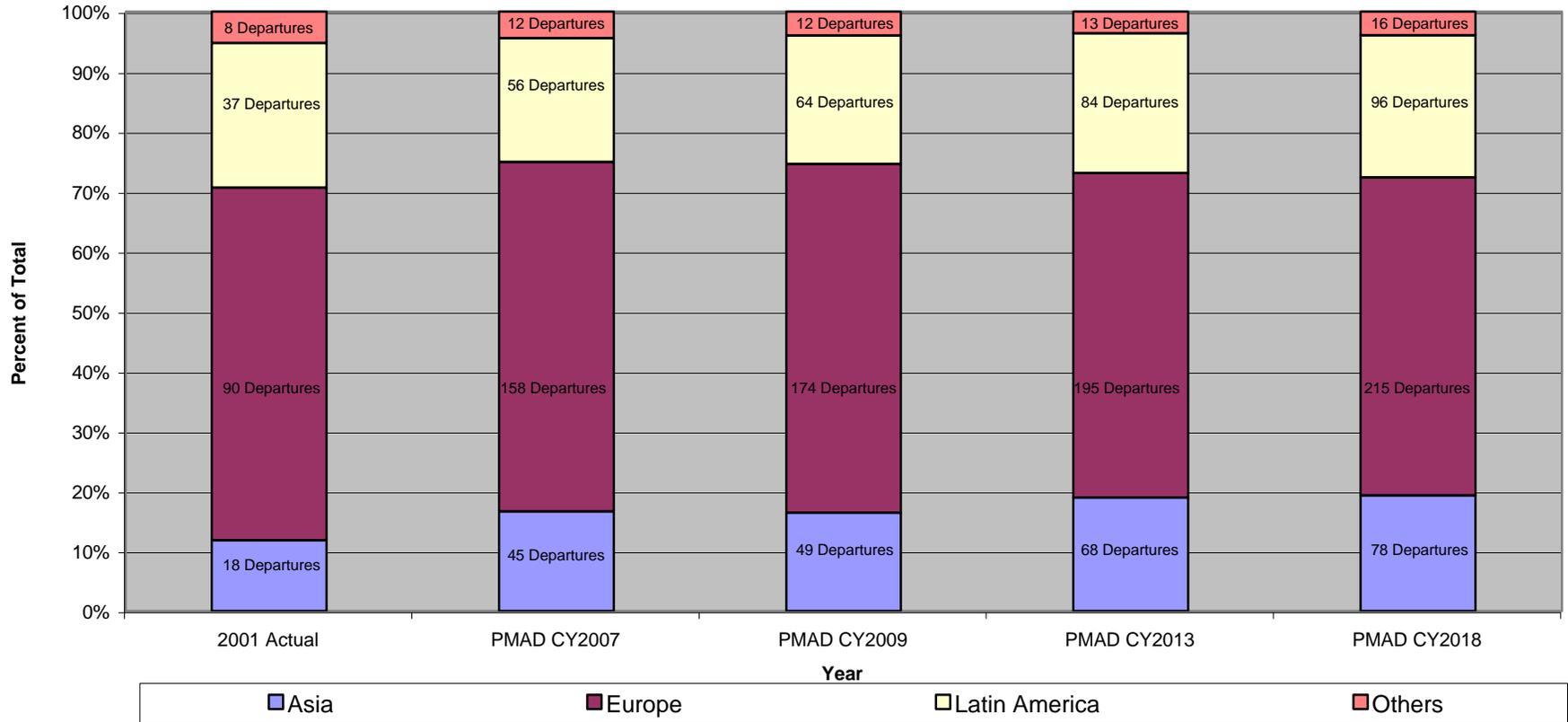
O'Hare International Airport - Design Day Schedules - Summary of International Markets

Markets	ICAO	Number of Flights									
		August 20, 2001		PMAD CY2007		PMAD CY2009		PMAD CY2013		PMAD CY2018	
		Arrivals	Departures	Arrivals	Departures	Arrivals	Departures	Arrivals	Departures	Arrivals	Departures
OSAKA JAPAN	RJBB	1	1	3	3	3	3	4	4	5	5
FUKUOKA JAPAN	RJFF	0	0					1		1	1
NAGOYA JAPAN	RJNN	0	0							2	2
SEOUL SOUTH KOREA	RKSI	1	1	2	2	2	2	3	3	3	3
SEOUL REPUBLIC OF KOREA	RKSS	0	0	1	1	1	1	1	1	1	1
MANILA PHILIPPINES	RPMM	0	0			1	1	1	1	1	1
BUENOS AIRES ARGENTINA	SAEZ	1	1	1	1	2	2	2	2	2	2
SAO PAULO BRAZIL	SBGR	1	1	1	2	1	2	2	2	2	2
RIO DE JANEIRO BRAZIL	SBRJ	0	0	2	1	2	2	2	2	2	2
SANTIAGO CHILE	SCEL	0	0	1				1	1	1	2
CARACAS VENEZUELA	SVMI	0	0			1	1	2	1	2	2
ANTIGUA	TAPA	0	0				6				
SAN JUAN PUERTO RICO	TJSJ	4	4	4	6	4		5	6	6	6
HONG KONG	VHHH	1	1	2	2	2	2	4	4	4	5
KUALA LUMPUR MALAYSIA	WMKK	0	0					1	1	1	1
SINGAPORE SINGAPORE	WSSS	0	0	1	1	1	1	1	1	1	1
BEIJING CHINA	ZBAA	1	1	2	3	3	3	5	5	5	5
SHANGHAI CHINA	ZSSS	0	0					1		2	1
Total		76	77	131	140	145	154	180	180	200	205

Sources: Official Airline Guide; Ricondo & Associates, Inc.

Prepared by: Ricondo & Associates, Inc., February 2003

Exhibit VIII-2 O'Hare International Airport International Departures by Region



Representative Markets:

Asia: Tai Pei, Taiwan; Tokyo, Japan; Seoul, South Korea; Bei Jing, China

Europe: Brussels, Belgium; Frankfurt, Germany; Madrid, Spain; Paris France

Latin America: Buenos Aires, Argentina; San Juan, Puerto Rico; Guadalajara, Mexico; Mexico City, Mexico

Others: Nairobi, Kenya; Tel Aviv, Israel

were obtained from one of ORD's hubbing carriers. The August 2001 historical load factor information showed significant variations throughout the day, ranging from 45 percent in the late evening hours (between 10 P.M. and 11 P.M.) to slightly lower than 94 percent in the mid afternoon hours (between 3 P.M. and 4 P.M.). Average daily load factors for arriving flights were also greater than the average daily load factors for departure flights (79 percent versus 77.5 percent).

The July 2002 historical load factor information also showed significant variations throughout the day, ranging from 30 percent in the mid evening hours (between 9 P.M. and 10 P.M.) to slightly lower than 87 percent in the mid afternoon hours (between 3 P.M. and 4 P.M.). However, average daily load factors for arriving and departing flights were nearly equal in 2002 (both averaging slightly higher than 76). For purposes of the design day schedule development, the August 2001 data was used, since it was more compatible with the OAG schedule used to derive each of the future activity schedules and the operating characteristics that support the 2001 TAF's.

The hourly load factors were chosen in lieu of average daily load factors by market in order to maintain the daily peaking patterns that were typical for ORD during the PMAD in 2001. While the average daily load factors by market would have provided daily passenger characteristics applicable to that given service market, they could have resulted in significantly different daily passenger distributions than that resulting from the application of the hourly load factors.

In addition, it was assumed that the daily load factors obtained from one of the Airport's hubbing carriers are representative of the load factor percentages and daily distributions associated with ORD's hubbing carriers. For the non-hubbing carriers, load factors for August 2001 were derived using historical operations, passengers, and aircraft types reported to the City by each airline. Using JP Airline Fleets International and the Official Airline Guide, the average seat size for each carrier's fleet was established and average daily load factors were derived accordingly. The derived load factors were compared against data available from the U.S. DOT T-100 database. For these non-hubbing carriers, the average load factor derived for an average day in August 2001 was held constant for all hours within the day.

The load factors derived as described above were allocated to each flight in the future design day schedules, and adjusted to reflect growth in passenger demand and/or increased fleet sizes. The adjustment of load factors was also used to calibrate the passenger enplanements included in the design day schedules with the PMAD passenger enplanements derived for each corresponding year.

Based on carrier input regarding historic activity, it is assumed that average daily connecting patterns at ORD will continue reflect a proportionally greater volume of originating passengers in the early to mid morning hours (i.e., from 6 A.M. through 10 AM), with local (O&D) traffic ranging from 50 to 65 percent. The remainder of the day is assumed to experience a significantly larger volume of connecting activity, ranging from 30 to 45 percent. These general patterns were adopted for the design day schedules and adjusted within the historical ranges to calibrate the O&D percentage share associated with each of the design day schedules with the derived PMAD O&D percentage for each corresponding year.

Similarly, based on historical O&D data obtained for the Airport's hubbing commuter airlines, it was assumed that the representative commuter/regional carriers would continue to possess a slightly lower O&D percentage (i.e. serving more connecting traffic) than their mainline partners. Thus, the O&D share maintained for the representative hubbing commuter/regional carriers in the future design day schedules ranges from 30 to 40 percent. Other representative carriers are assumed to

predominantly serve O&D traffic, therefore the O&D share for these other carriers ranged from 80 percent to 100 percent.

8.5 Peaking Characteristics

Appendices B through E graphically depict the rolling hour trends associated with the 2001 PMAD schedule and those related to each of the four future design day schedules. The future schedules generally follow the daily peaking and traffic distribution trends characterized by the 2001 PMAD except in a few instances in which some additional activity is shown to occur during the non-peak periods. These trends are more prevalent in the international activity graphs and result from increased frequencies to existing international markets and the addition of new service to different markets/regions. **Table VIII-8** summarizes the peak hour activity levels for each design day.

8.6 Non-Commercial Activity

In addition to the design day schedule of commercial (airline) activity, future schedules of non-commercial activity were also developed. The non-commercial activity components include all-cargo, general aviation/miscellaneous, and military. Once again, the PMAD derivative projections were used to calibrate the future non-commercial activity schedules.

Just like a flight schedule from the Official Airline Guide was used to develop each of the future commercial service design day schedules, an inventory of historical activity for August 20, 2001 was used to create the future non-commercial activity schedules. Information from the Official Airline Guide and the Airport's ARTS database was used to generate the historical activity database.

As discussed earlier, non-commercial activity represents a small percentage of ORD's overall traffic (i.e., approximately five to six percent). This trend is expected to continue in the future, with additional growth projected for the all-cargo activity concurrent with a continued decrease in the general aviation/miscellaneous activity occurring at the Airport. As such, additional growth in all-cargo operations was assumed for some of the existing cargo operators, which are denoted as representative carriers. New service by other domestic all-cargo operators was assumed as well. Foreign flag carriers were also shown to add future international all-cargo service (this assumption was made for the outer year schedules, 2013 and 2018). Additional flights for the all-cargo carriers included increased frequencies to each representative carrier's primary hubs and new service to some of the smaller regional hubs.

General aviation activity and other miscellaneous operations are assumed to relocate to the less congested airports in the region. It is assumed that most of the remaining general aviation activity at ORD would correspond to corporate traffic. Military activity, as previously stated, is currently non-existent at ORD and assumed to remain that way throughout the demand analysis period. As such, based on these assumptions and the decrease in activity projected for ORD in the 2001 TAF's from 2002 through the remainder of the demand horizon, no additional general aviation or military flights were added to the future design day schedules.

8.7 Fleet Mix

Table VIII-9 presents a summary of the 2001 PMAD fleet mix and the projected fleet composition for each of the four future design day schedules. The fleet mix shown in this table reflects scheduled airline activity only. As shown, growth in the large narrow body and regional jet fleets are anticipated, influenced predominantly by the domestic air service activity. It is assumed that all

Table VIII-8
Peaking Summaries

	<u>2001</u>	<u>2007</u>	<u>2009</u>	<u>2013</u>	<u>2018</u>
AIRCRAFT OPERATIONS (Air Carrier and Commuter Activity only)					
Peak Hour Arrivals ¹	114	115	119	128	133
Time of Day - Peak Hour Arrivals ¹	2050-2059	2020-2029	2020-2029	2050-2059	2050-2059
Percent of PMAD Arrivals ¹	8.8%	8.4%	8.5%	8.6%	8.4%
Total PMAD Arrivals ¹	1,289	1,364	1,405	1,485	1,581
Nighttime PMAD Arrivals ²	101	98	99	107	118
Daytime PMAD Arrivals ²	1,188	1,266	1,306	1,378	1,463
Peak Hour Departures ¹	118	121	122	127	133
Time of Day - Peak Hour Departures ¹	740-749	850-859	850-859	1720-1729	1720-1729
Percent of PMAD Departures ¹	9.2%	8.9%	8.7%	8.6%	8.4%
Total PMAD Departures ¹	1,289	1,364	1,404	1,485	1,582
Nighttime PMAD Departures ²	82	83	87	96	105
Daytime PMAD Departures ²	1,207	1,281	1,317	1,389	1,477
Total Peak Hour Operations ¹	191	207	212	222	235
Time of Day - Peak Hour Operations ¹	1910-1919	1410-1419	1410-1419	1410-1419	1900-1909
Percent of Total PMAD Operations ¹	7.4%	7.6%	7.5%	7.5%	7.4%
Total PMAD Operations ¹	2,578	2,728	2,809	2,970	3,163
Nighttime PMAD Operations ²	183	183	186	203	223
Daytime PMAD Operations ²	2,395	2,545	2,623	2,767	2,940
DOMESTIC PASSENGERS (AIR CARRIER AND COMMUTER) ³					
Peak Hour - Domestic Passengers	15,397	17,098	17,189	18,724	21,195
Time of Day - Peak Hour Domestic Passengers	1900-1909	1900-1909	1900-1909	1900-1909	1900-1909
Percent of PMAD Domestic Passengers	7.8%	7.9%	7.6%	7.7%	7.9%
Total PMAD Domestic Passengers	198,436	216,981	225,387	243,275	268,411
Peak Hour - O&D Domestic Passengers	8,398	9,494	9,762	10,145	10,698
Time of Day - Peak Hour O&D Domestic Passengers	830-839	850-859	850-859	850-859	830-839
INTERNATIONAL PASSENGERS ³					
Peak Hour - International Passengers	4,563	6,013	6,729	8,350	9,126
Time of Day - Peak Hour International Passengers	1640-1649	1750-1759	1750-1759	1720-1729	1720-1729
Percent of PMAD International Passengers	17.4%	13.4%	13.3%	13.2%	12.5%
Total PMAD International Passengers	26,233	44,964	50,455	63,353	72,977
Peak Hour - O&D International Passengers	1,875	2,437	2,773	3,318	3,665
Time of Day - Peak Hour O&D International Passengers	1750-1759	1750-1759	1750-1759	1720-1729	1720-1729

Notes:

¹ Includes domestic and international activity

² Daytime = 0700-2159; Nighttime - 2200-659

³ Includes arriving and departing passengers

Sources: Official Airline Guide; Ricondo & Associates, Inc.

Prepared by: Ricondo & Associates, Inc., February 2003

Table VIII-9

Design Day Fleet Mix Summary - Scheduled Air Carrier Service ¹

Seats Range	Representative Aircraft	PMAD CY2001		CY2007		CY2009		CY2013		CY2018	
		Aircraft Count	% of Total								
350+ Seats	B-744, B74M, A380	29	1.1%	39	1.4%	42	1.5%	52	1.8%	70	2.2%
250-349 Seats	MD-11, A340, B777, A310, A330	73	2.8%	148	5.4%	171	6.1%	253	8.5%	351	11.1%
150-249 Seats	B738, B72S, MD-90, B762, B767 A321, B739, B757, B764, B763	563	21.8%	935	34.3%	993	35.4%	1,114	37.5%	1,223	38.7%
100-149 Seats	DC-9, B735, B73S, A319, MD-80 B733, B737, B73G, A320, B734, B717	1,088	42.2%	942	34.5%	925	32.9%	855	28.8%	783	24.7%
51-99 Seats	CRJ700, CRJ900, F100	148	5.7%	24	0.9%	30	1.1%	64	2.2%	95	3.0%
Up to 50 Seats	CRJ, E145, ERJ, E146, BE1900, D328 E135, E140	677	26.3%	640	23.5%	648	23.1%	632	21.3%	642	20.3%
Total		2,578	100.0%	2,728	100.0%	2,809	100.0%	2,970	100.0%	3,164	100.0%

¹ Excludes all-cargo, general aviation, military, and other miscellaneous activity.

commuter turbo props will be replaced with regional jets by 2007, with continued growth in the number of large regional jets (i.e. 70-seats or larger) operating at ORD occurring between 2007 and 2018.

The decrease shown in the 50-99 seat aircraft from 2001 to 2007 is primarily due to the phase-out of the F100 fleet, which is assumed to be replaced by small narrow body aircraft. In addition, the 2000/2001 market share used to derive future activity by representative carrier appears to be lower than the market share held by American Eagle and United Express in August 2001, thus indicating that the trend towards increased utilization of the regional partners by American and United had in fact begun (however, this emerging trend which seems to be more evident today are assumed to not be reflected in the 2001 TAF's, even though all indications at this time suggests that future TAF's will reflect the growing use of the regional fleets).

The large narrow body fleets are assumed to be dominated by the newer generation and larger 737's, e.g., 737-800 and 737-900, the Airbus 321, and the newer B757 series, i.e., B757-300. These aircraft are assumed to be replacements for the B727 and the smaller Boeing 767-200's. Similarly, the small narrow body fleet category is assumed to be dominated by the smaller B737's and Airbus fleets, like the A320 and A319. Steadily and increasing phase-outs of the DC-9 and MD80 fleets are assumed to continue throughout the near-term future (i.e., through 2009).

The widebody fleets are assumed to be characterized by an increasing number of the larger B767-400 aircraft, continued use of the B767-300 fleets, and a gradual phaseout of the older and smaller B767-200.

Some transcontinental markets (such as west coast cities like San Francisco, Los Angeles, and Seattle and east coast cities like Boston, Washington D.C. and Miami) would continue to be served by the large narrow body and some wide body fleets. The jumbo body fleets are assumed to be utilized primarily to connecting hub cities and international markets. Aircraft like the B777, A330, and A340 are projected to join the B747 for service to the international markets. As such, given the increased international growth projected for ORD, the future fleet mix reflects an increase share of jumbo body aircraft operating to and from ORD. In addition, New Large Aircraft (NLA), like the A380, are assumed to begin operating at ORD by 2009, particularly as deliveries of these aircraft materialize to carriers like Singapore Airlines, Air France, and Virgin Atlantic, all of which are assumed to represent some of ORD's international growth in the future.

All-cargo operations are assumed to occur with some more modern fleets. Specifically, it is assumed that the Boeing 727 and McDonnell Douglas DC-8 aircraft will be nearly, if not completely phased out by 2013 and 2018. As such, it is assumed that aircraft like the Airbus A300, Boeing 757, and Boeing 767 will become more prevalent among all-cargo carriers for domestic flights. For international all-cargo operations, it is assumed that the Boeing 747 and 777 will be typical fleets transporting cargo to and from transpacific and transatlantic markets.

General aviation operations remaining at ORD are anticipated to be associated with corporate activity that prefer to utilize ORD due to its geographic location relative to Chicago's downtown business district and metropolitan areas surrounding the Airport. As such, it is assumed that the newer corporate fleets, such as Learjets and newer generation Gulfstream aircraft will comprise most of the general aviation activity operating at ORD in CY2007 through CY2018.

APPENDIX A



U. S. Department
Of Transportation
**Federal Aviation
Administration**

Great Lakes Region
Illinois, Indiana, Michigan,
Minnesota, North Dakota,
Ohio, South Dakota,
Wisconsin

2300 East Devon Avenue
Des Plaines, Illinois 60018

December 19, 2002

Mr. Christopher P. Arman
Deputy Commissioner, Department of Aviation
O'Hare Modernization Program Office
8755 W. Higgins Road, Suite 610
Chicago, IL 60631

Subject: Use of FAA's 2001 Terminal Area Forecast for Planning Purposes
And Acceptance of Derivative Forecast Methodology

Dear Mr. Arman:

This letter is in response to your requests to use the Federal Aviation Administration's (FAA's) 2001 Terminal Area Forecast (TAF) for planning purposes in support of the O'Hare Modernization Program (OMP) Environmental Impact Statement (EIS), and for concurrence on the methodology used to prepare subsequent derivative demand profiles.

The FAA concurs with your request to utilize the FAA's 2001 TAF for planning purposes. At this time, the 2001 TAF is the most current TAF published. It is anticipated that subsequent FAA forecasts will be issued during the OMP EIS process. Accordingly, appropriate consideration/discussion of any differences with, and the consequences of, subsequent forecasts may prove necessary in the forthcoming OMP EIS. In such a case we would expect the EIS to include a sensitivity analysis of the differing forecasts. An analysis of the effect of potential fleet changes may also be necessary as it appears likely that, at least in the short-term, there may be considerable migration from main line aircraft to regional jets.

After consultation with FAA's Systems Analysis and Policy Analysis Division, we also concur that the methodology used by the City in the preparation of derivative demand profiles through 2022 is appropriate and sound. We appreciate your efforts to ensure that the methodology and assumptions utilized have been extensively coordinated with and reviewed by FAA staff.

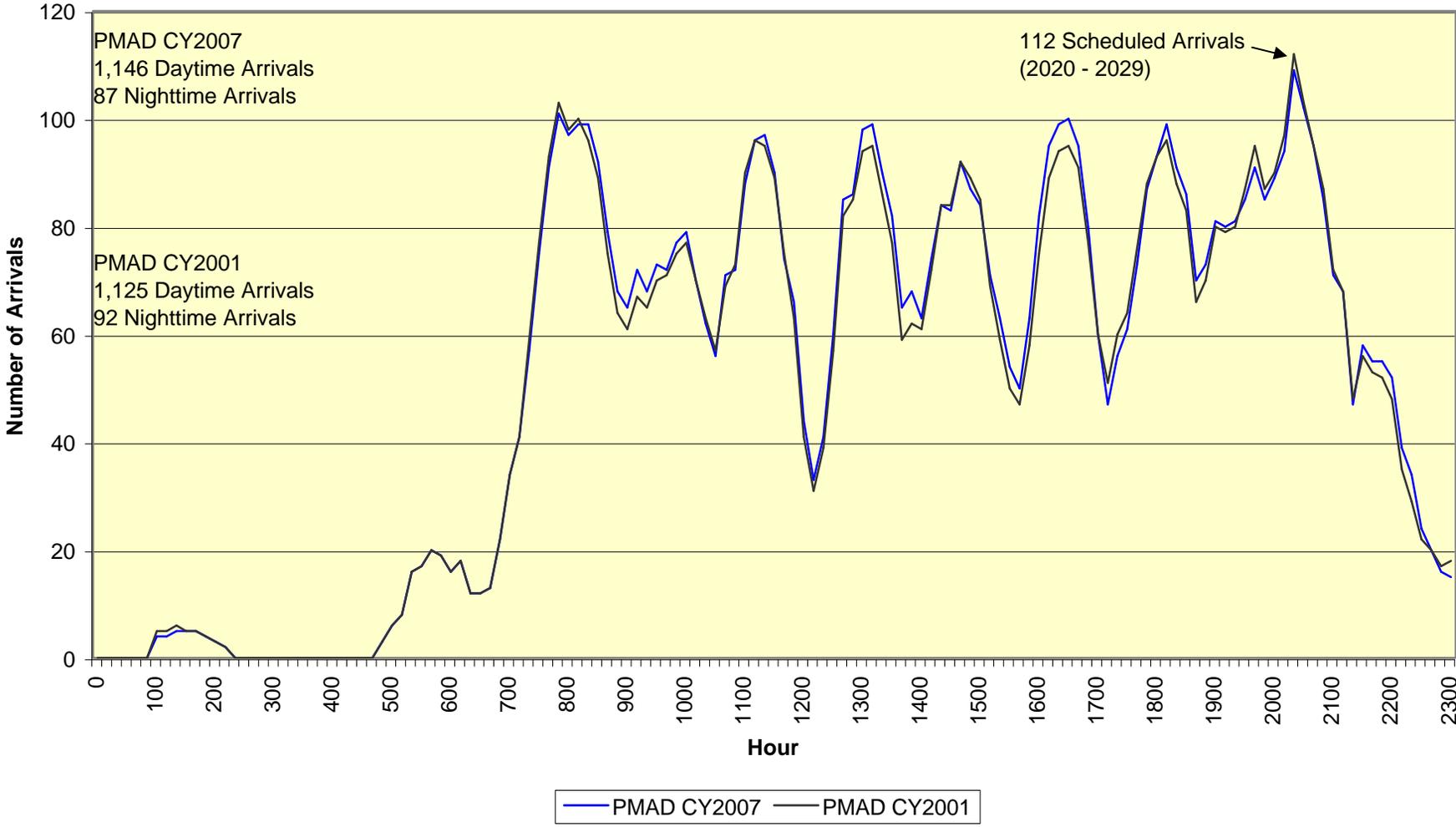
We appreciate your ongoing commitment to coordination efforts with us on this EIS. Since changes are likely to occur in a project of this magnitude, we solicit your continued cooperation with FAA to ensure that additional concerns or questions posed by us, especially with regard to aviation forecasts, are addressed to our satisfaction.

Sincerely,

Philip M. Smithmeyer, Manager
Chicago Airports District Office

APPENDIX B

Exhibit B-1A
O'Hare International Airport - Domestic Arrivals (PMAD CY2007)
Sum of Previous Hour



Sources: Official Airline Guide; Ricondo & Associates, Inc.
 Prepared by: Ricondo & Associates, Inc.

Exhibit B-1B
O'Hare International Airport - Domestic Departures (PMAD CY2007)
Sum of Previous Hour

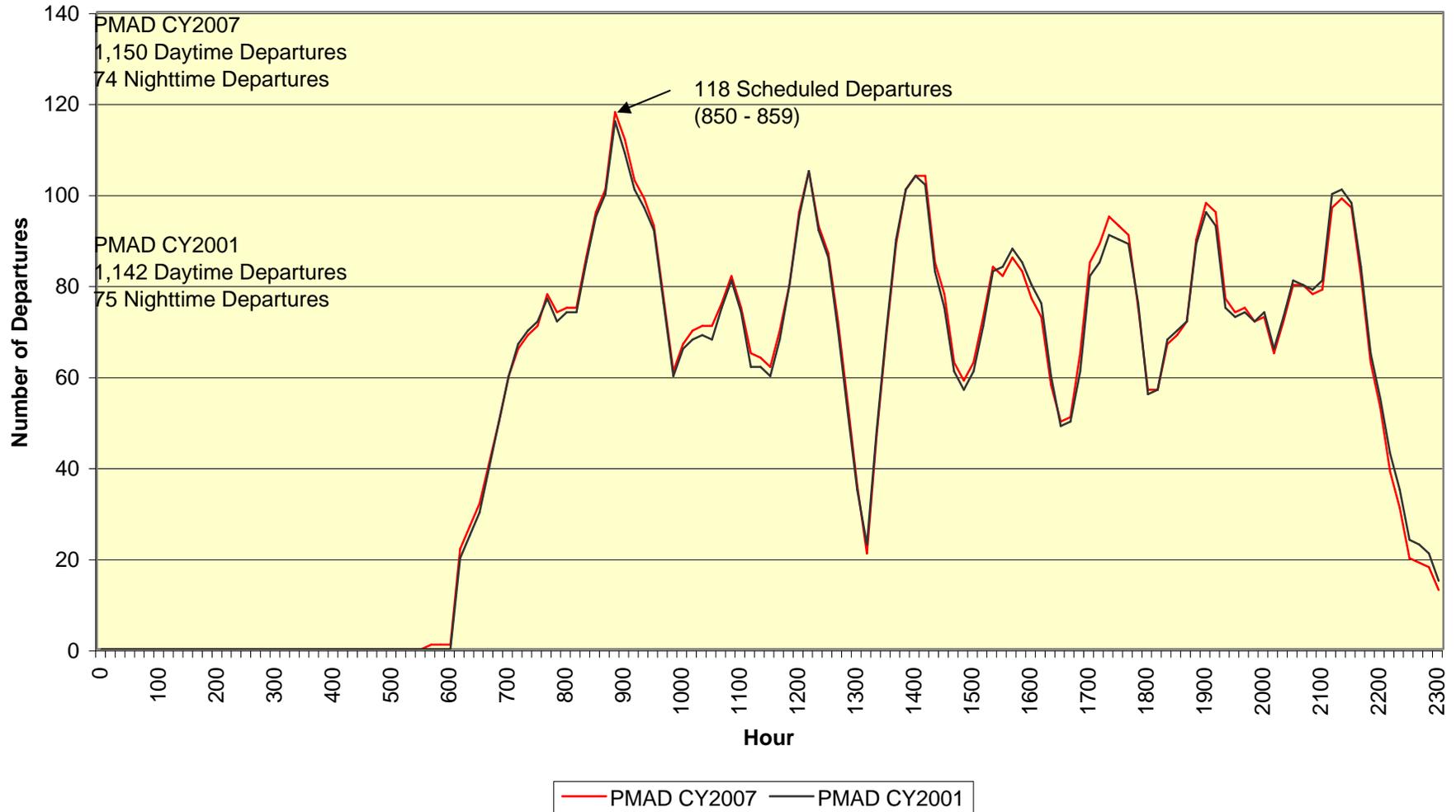
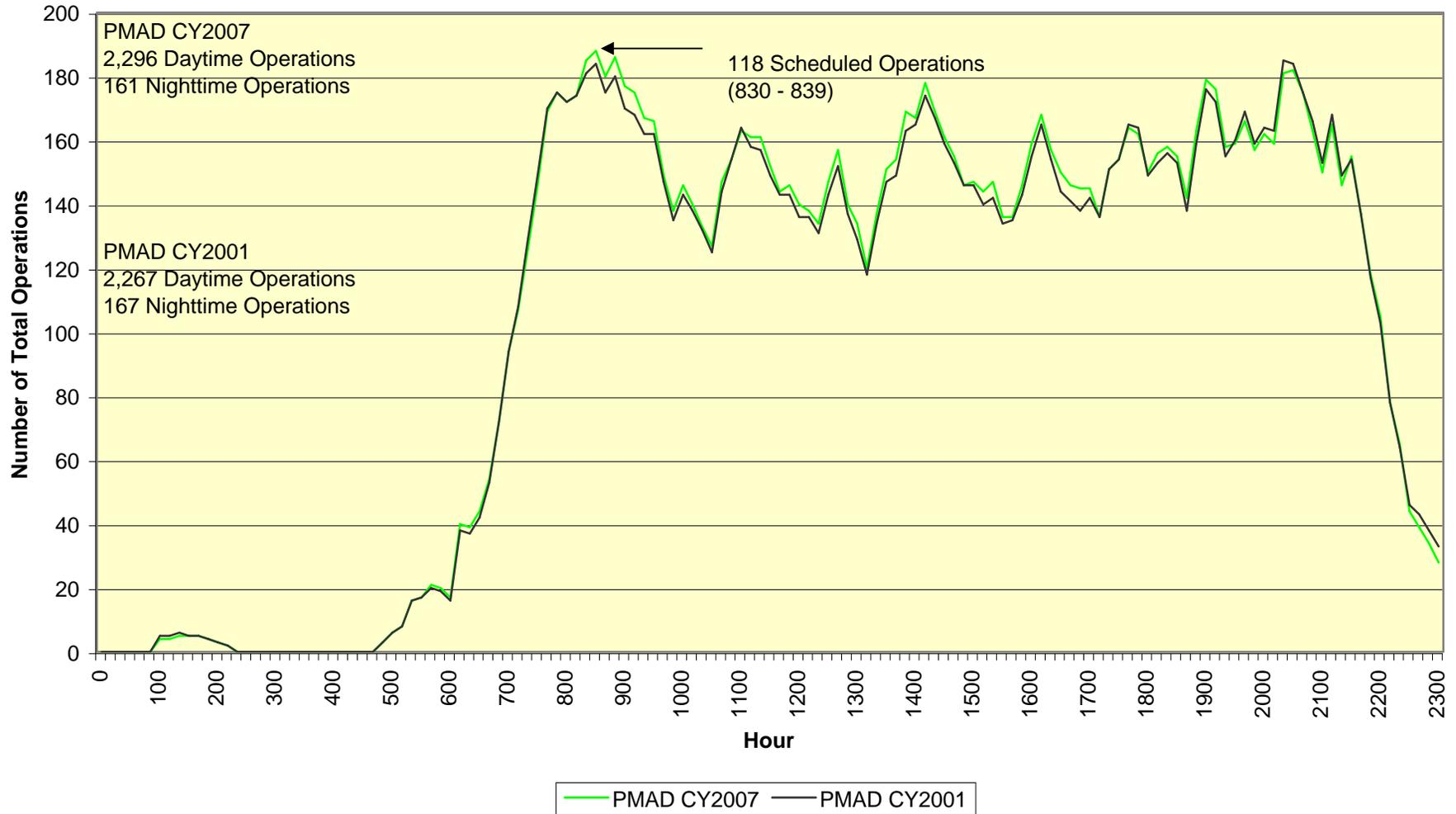


Exhibit B-1C
O'Hare International Airport - Scheduled Domestic Operations (PMAD CY2007)
Sum of Previous Hour



Sources: Official Airline Guide; Ricondo & Associates, Inc.
 Prepared by: Ricondo & Associates, Inc.

Exhibit B-1D
O'Hare International Airport - International Arrivals (PMAD CY2007)
Sum of Previous Hour

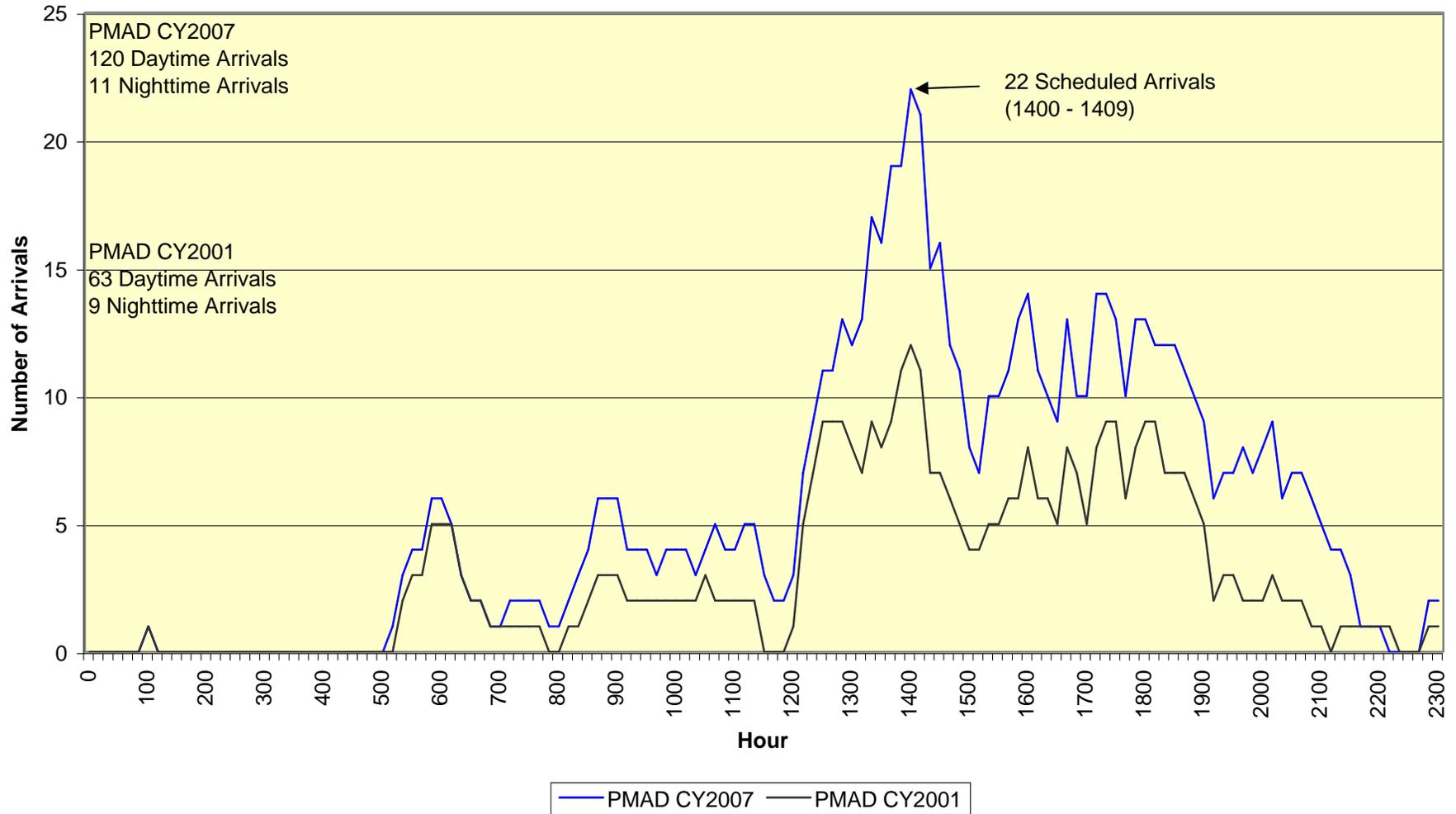


Exhibit B-1E
O'Hare International Airport - International Departures (PMAD CY2007)
Sum of Previous Hour

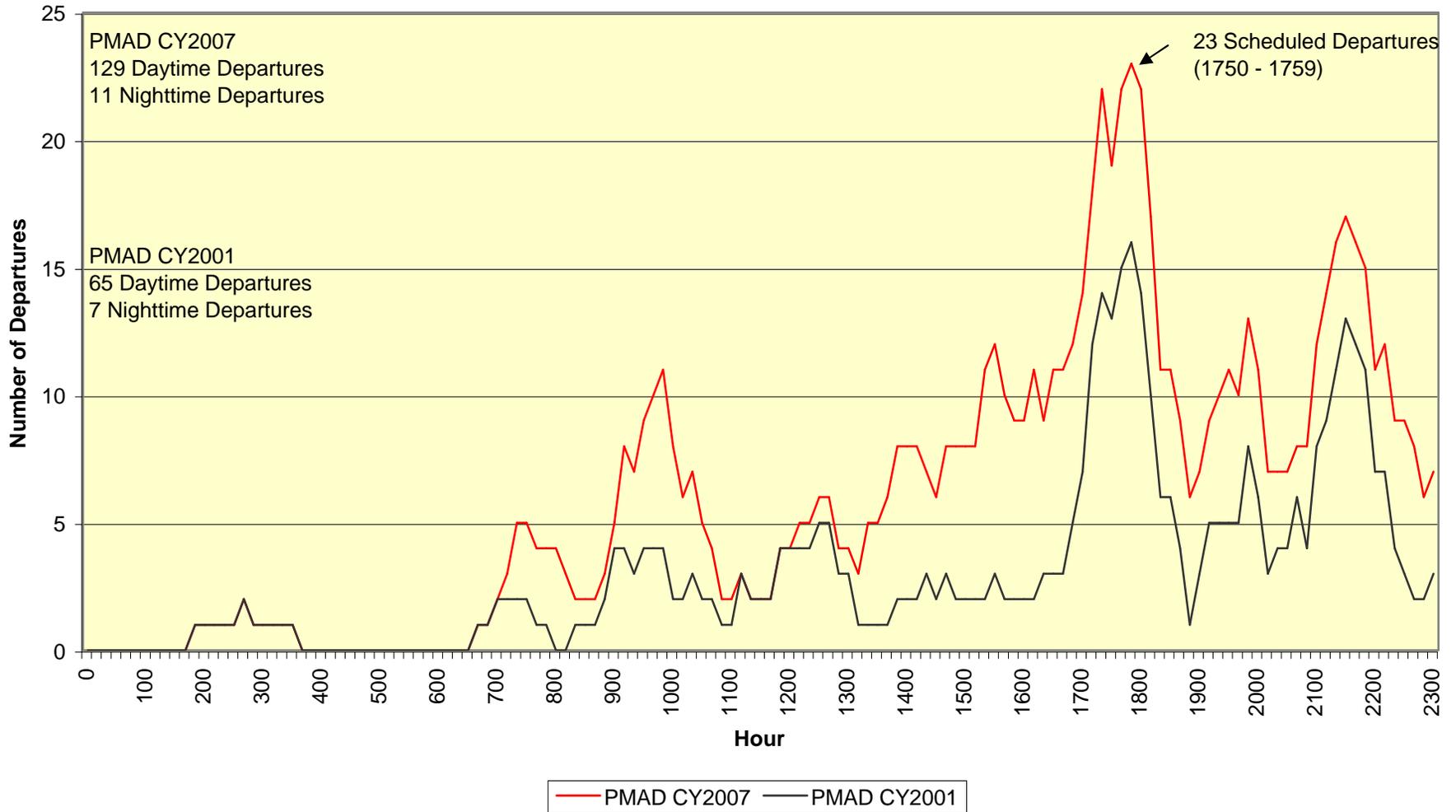
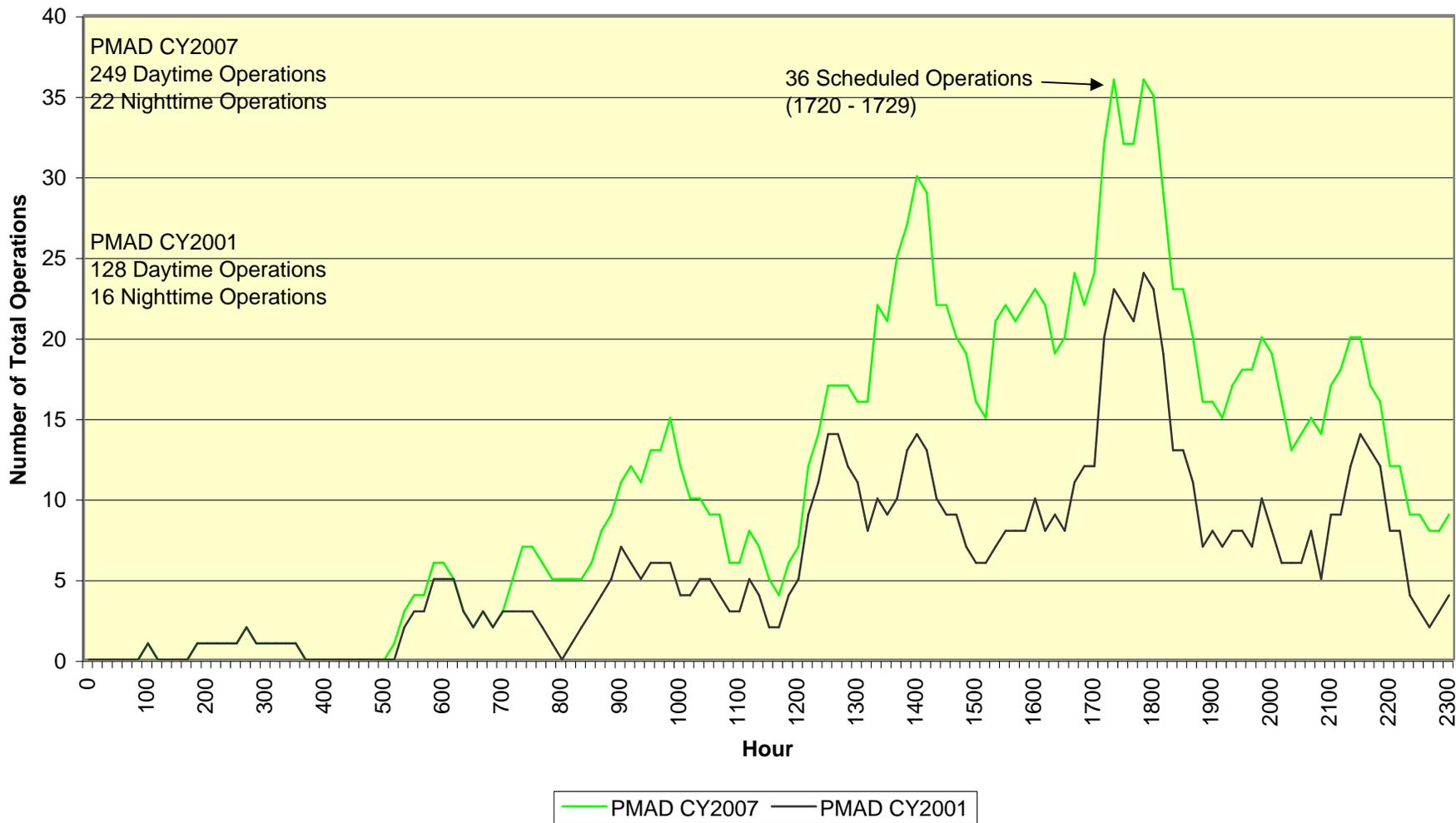


Exhibit B-1F
O'Hare International Airport - Scheduled International Operations (PMAD CY2007)
Sum of Previous Hour



Sources: Official Airline Guide; Ricondo & Associates, Inc.
 Prepared by: Ricondo & Associates, Inc.

APPENDIX C

Exhibit C-1A
O'Hare International Airport - Domestic Arrivals (PMAD CY2009)
Sum of Previous Hour

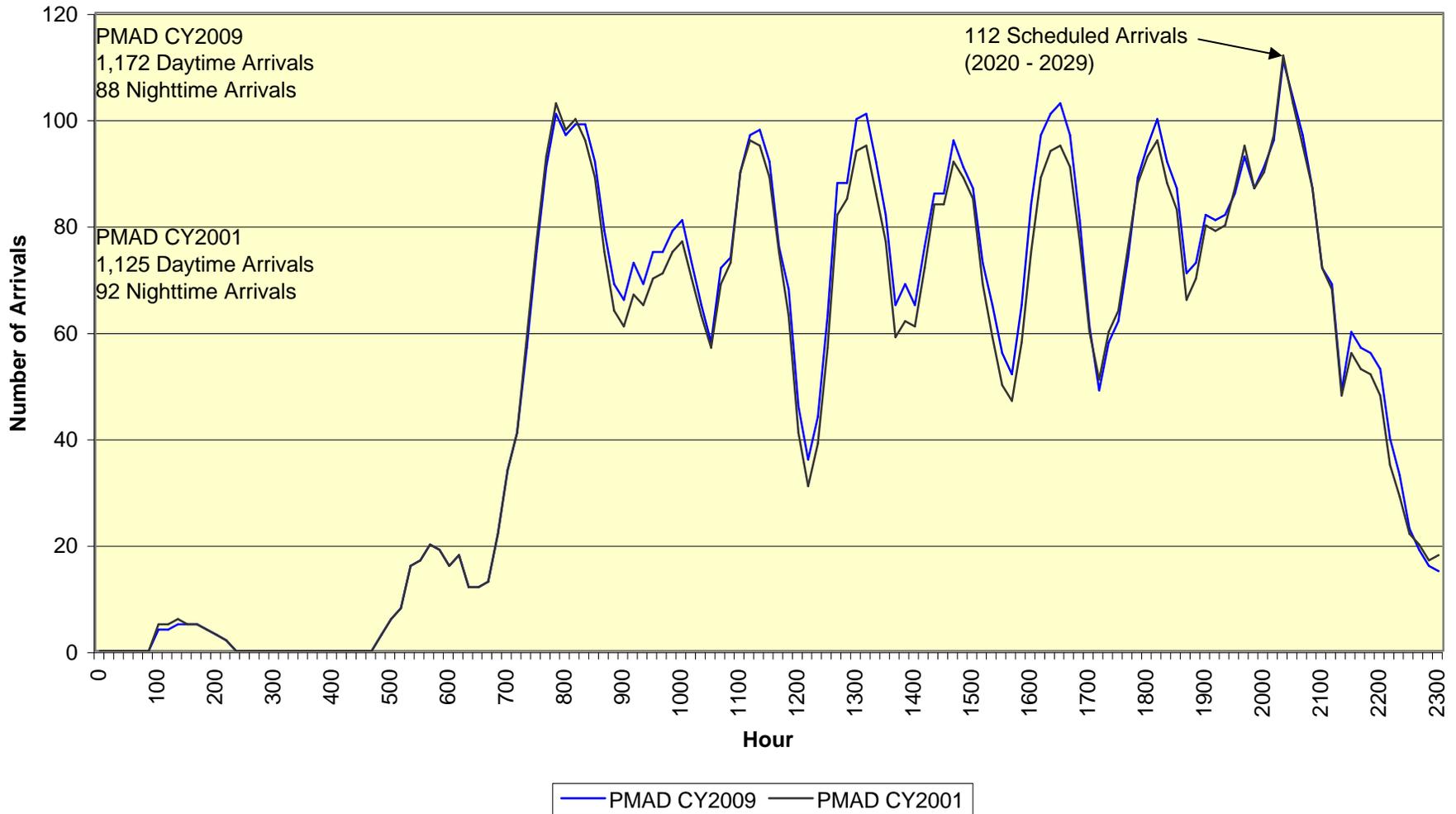


Exhibit C-1B
O'Hare International Airport - Domestic Departures (PMAD CY2009)
Sum of Previous Hour

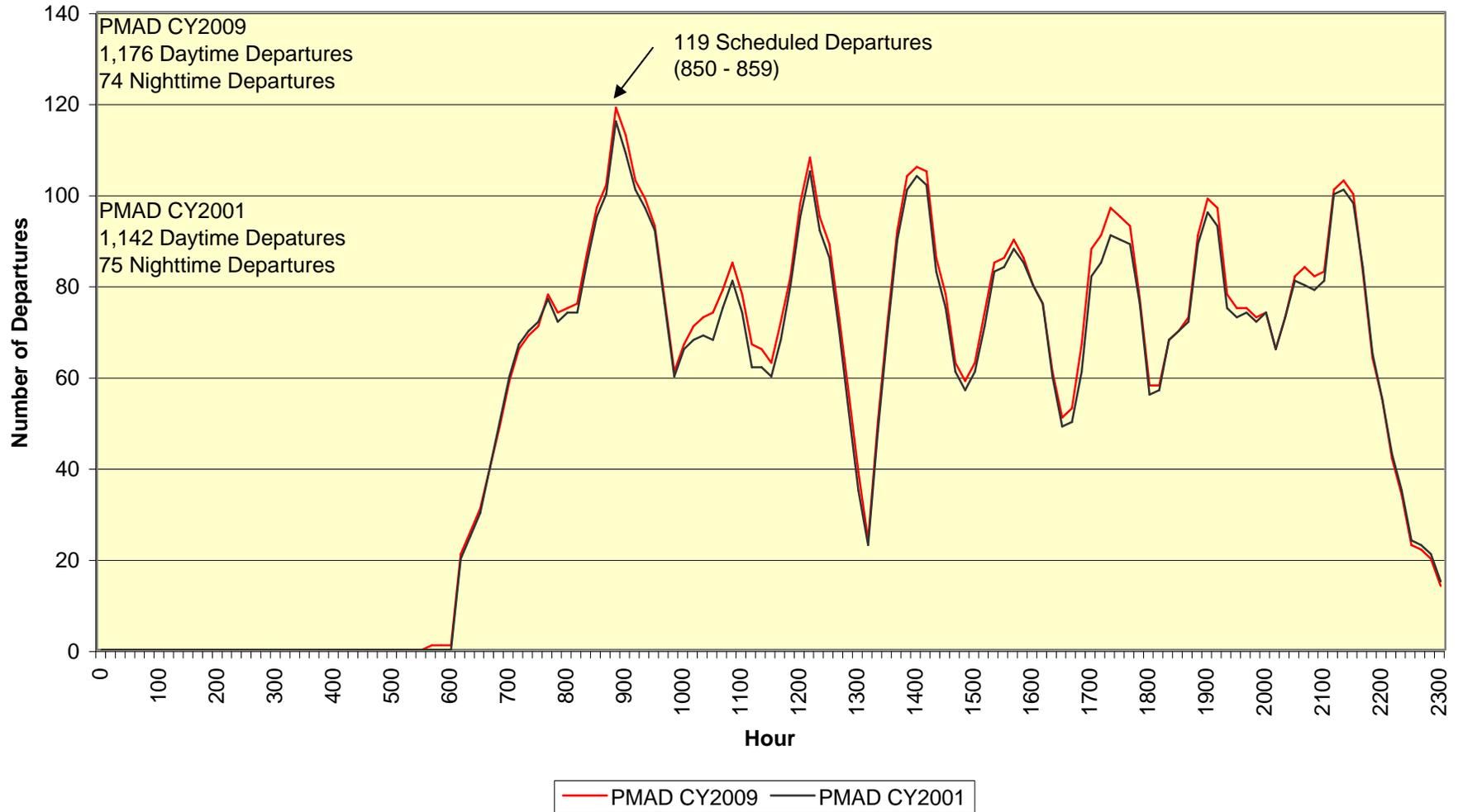


Exhibit C-1C
O'Hare International Airport - Scheduled Domestic Operations (PMAD CY2009)
Sum of Previous Hour

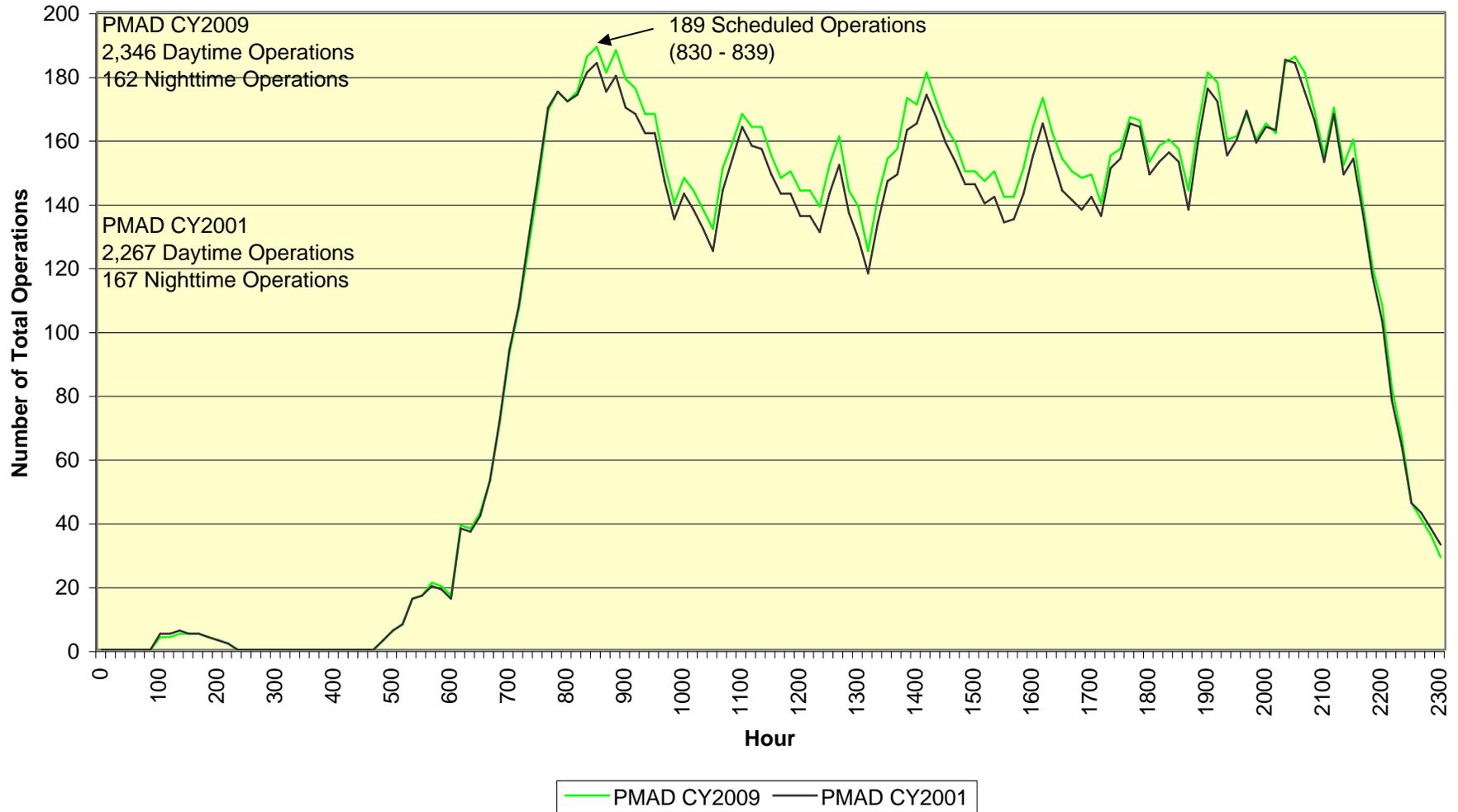


Exhibit C-1D
O'Hare International Airport - International Arrivals (PMAD CY2009)
Sum of Previous Hour

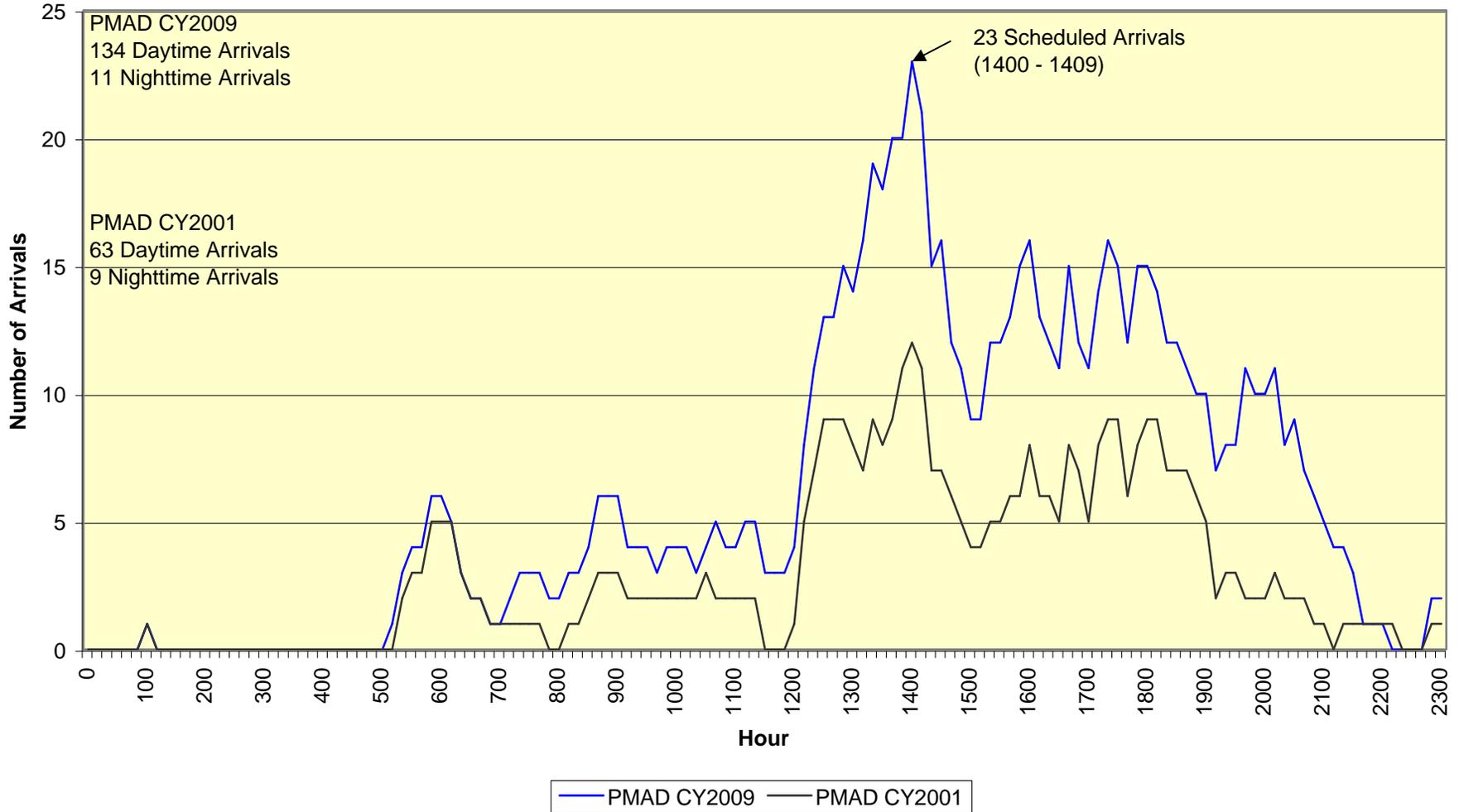


Exhibit C-1E
O'Hare International Airport - International Departures (PMAD CY2009)
Sum of Previous Hour

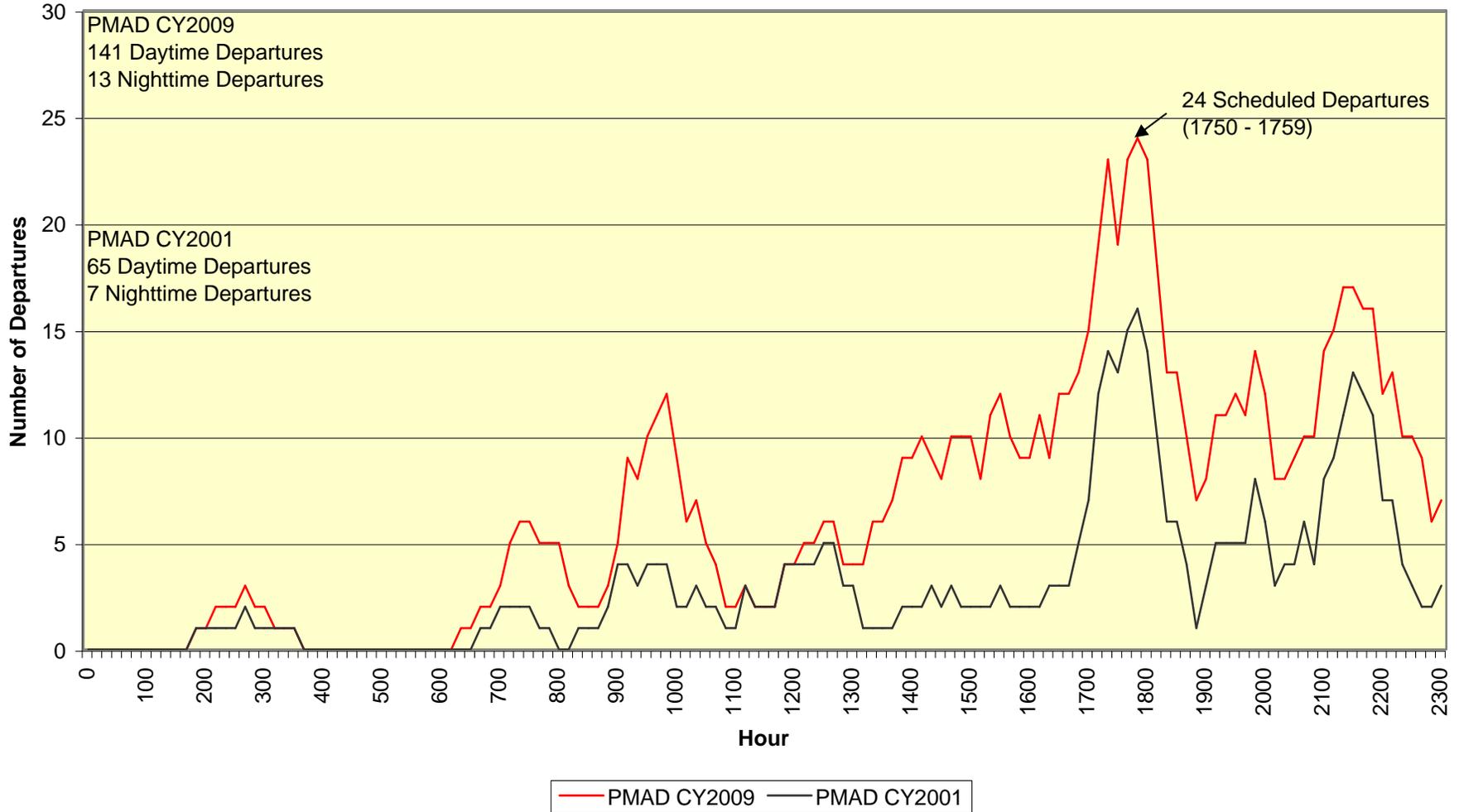
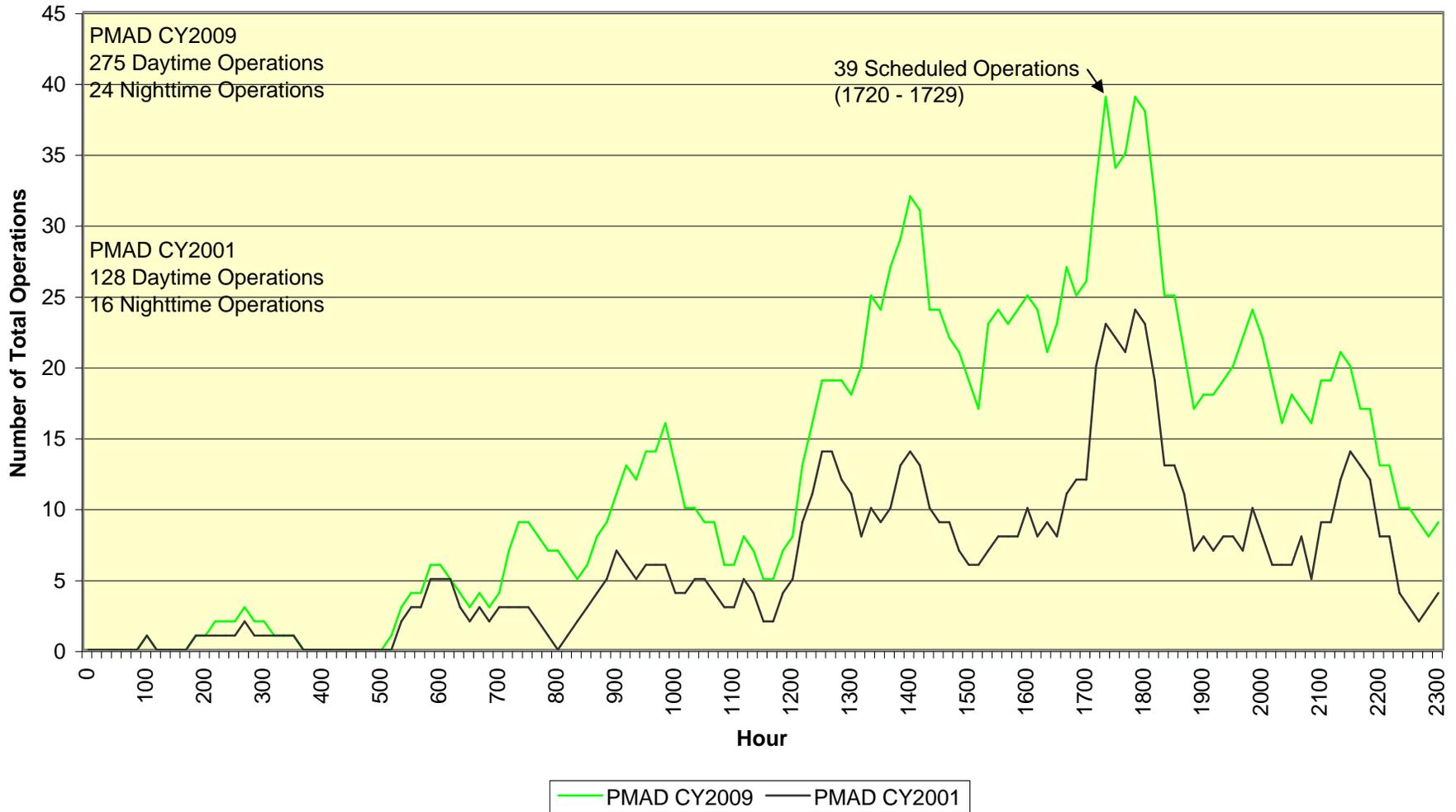
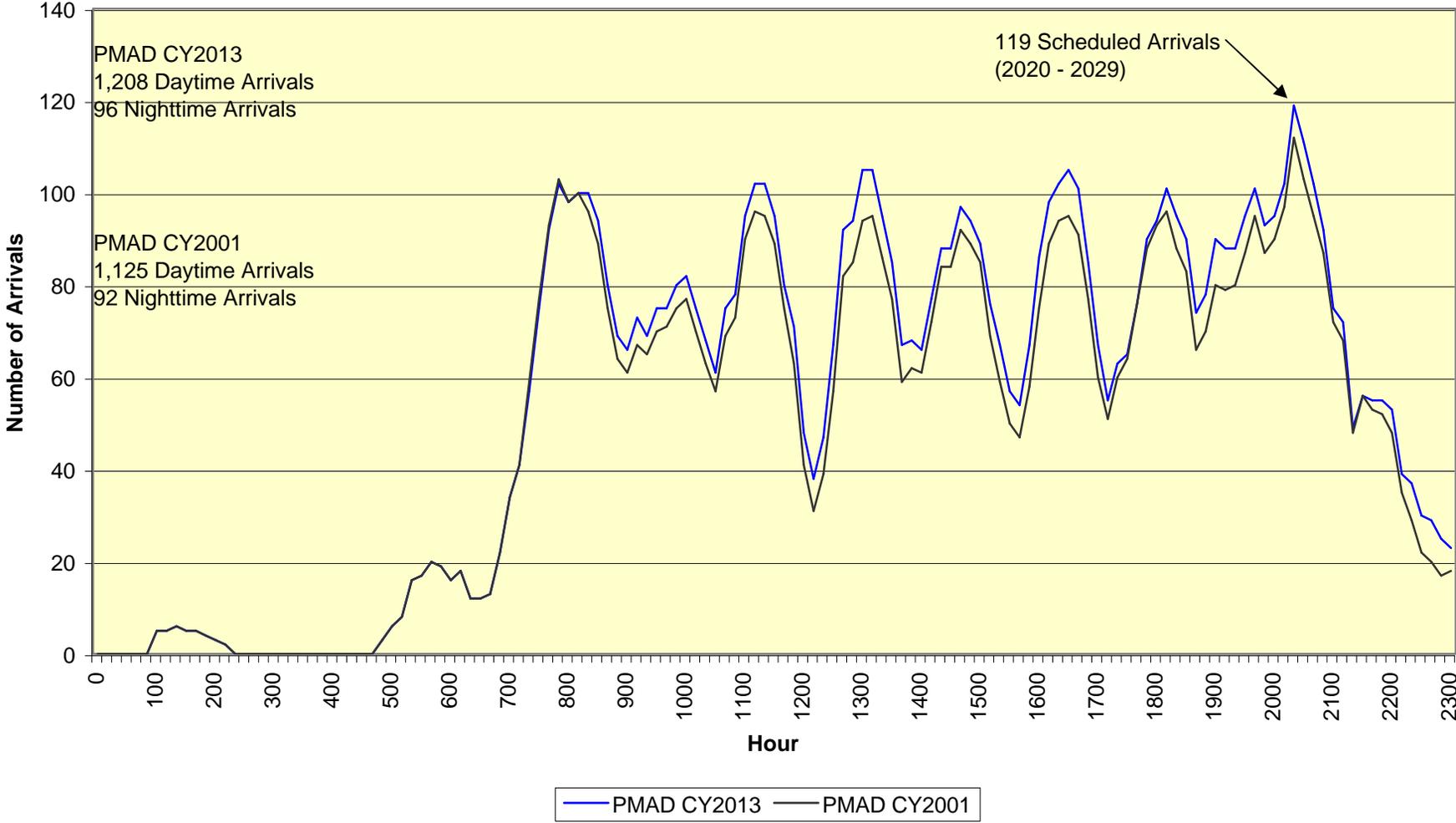


Exhibit C-1F
O'Hare International Airport - Scheduled International Operations (PMAD CY2009)
Sum of Previous Hour



APPENDIX D

Exhibit D-1A
O'Hare International Airport - Domestic Arrivals (PMAD CY2013)
Sum of Previous Hour



Sources: Official Airline Guide; Ricondo & Associates, Inc.
 Prepared by: Ricondo & Associates, Inc.

Exhibit D-1B
O'Hare International Airport - Domestic Departures (PMAD CY2013)
Sum of Previous Hour

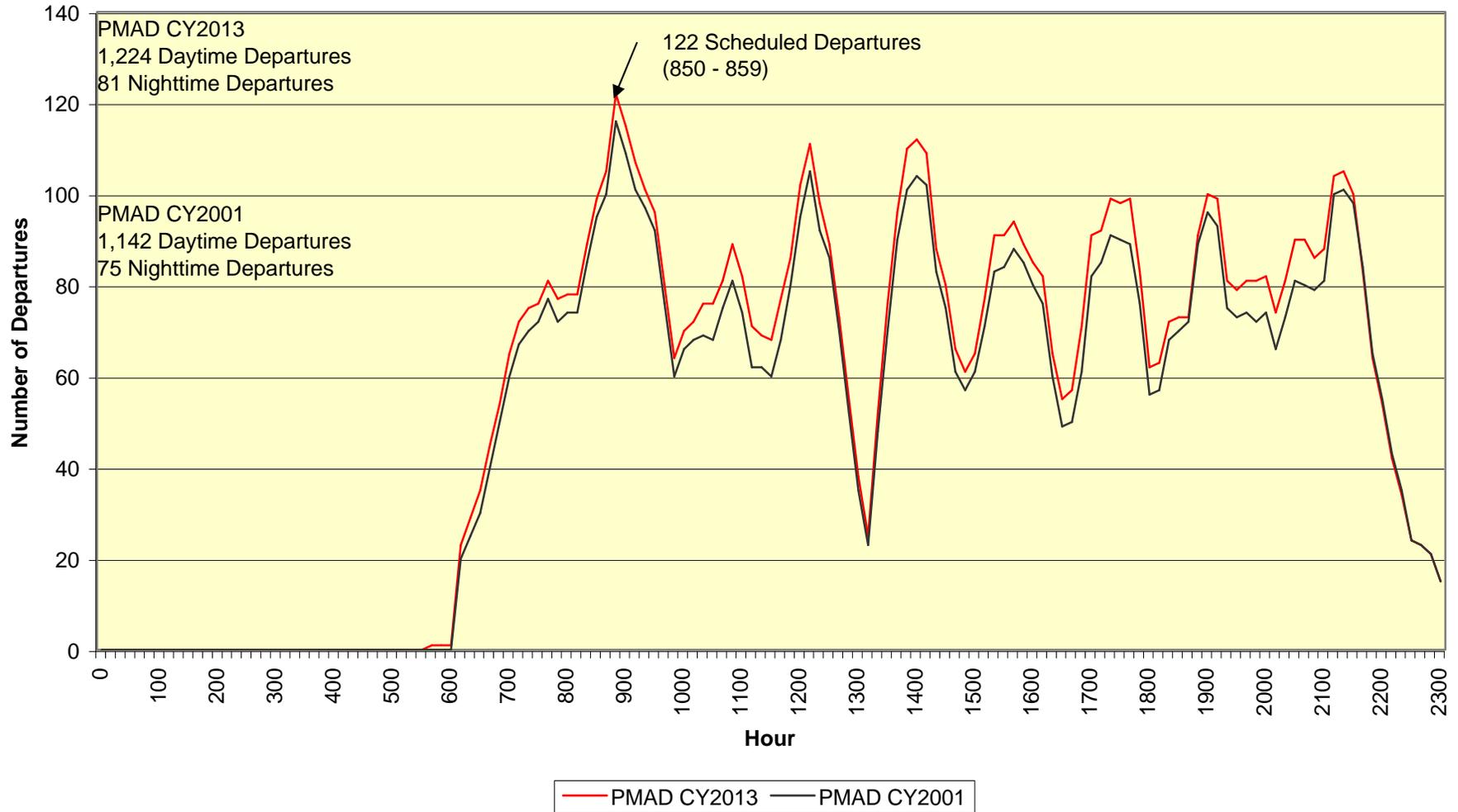


Exhibit D-1C
O'Hare International Airport - Scheduled Domestic Operations (PMAD CY2013)
Sum of Previous Hour

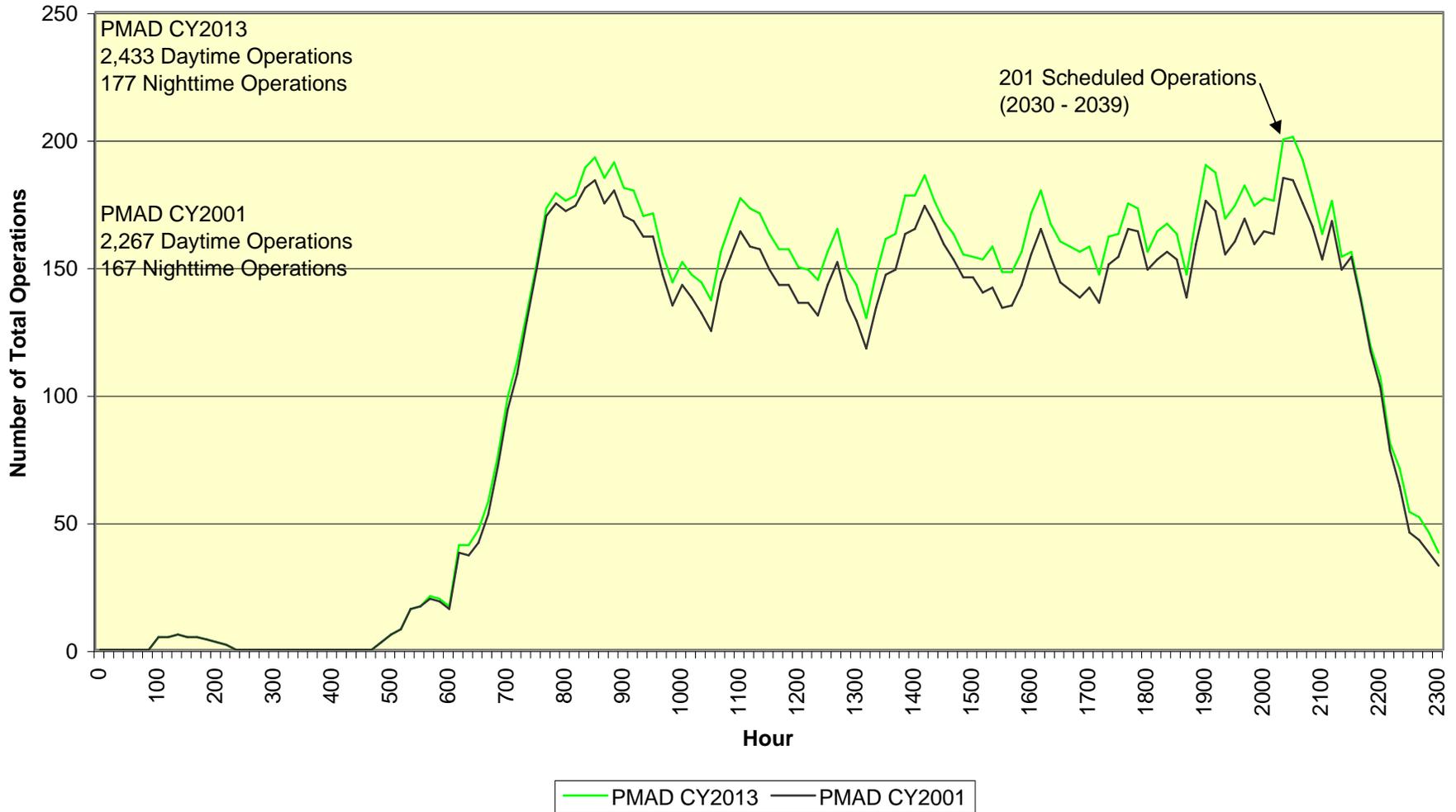


Exhibit D-1D
O'Hare International Airport - International Arrivals (PMAD CY2013)
Sum of Previous Hour

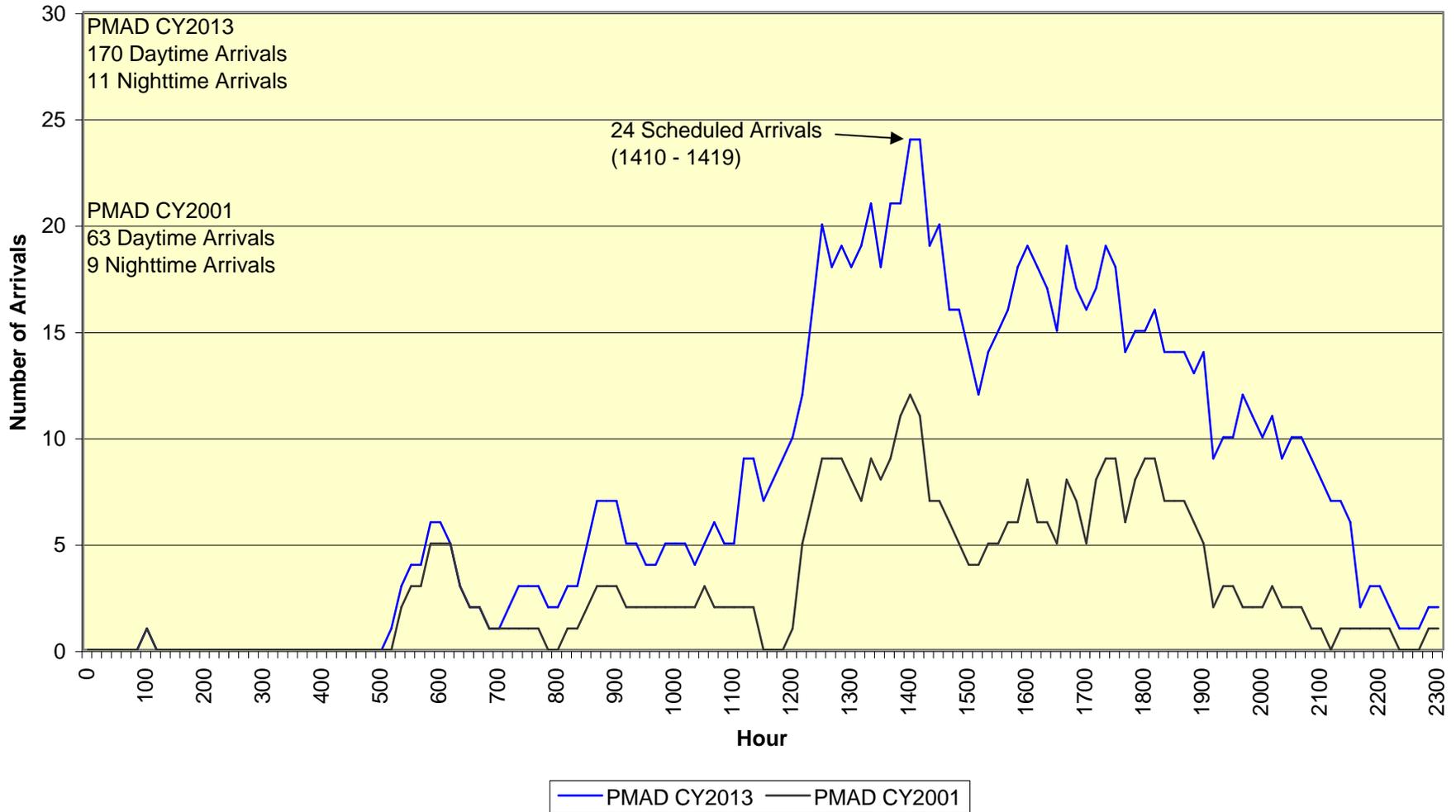


Exhibit D-1E
O'Hare International Airport - International Departures (PMAD CY2013)
Sum of Previous Hour

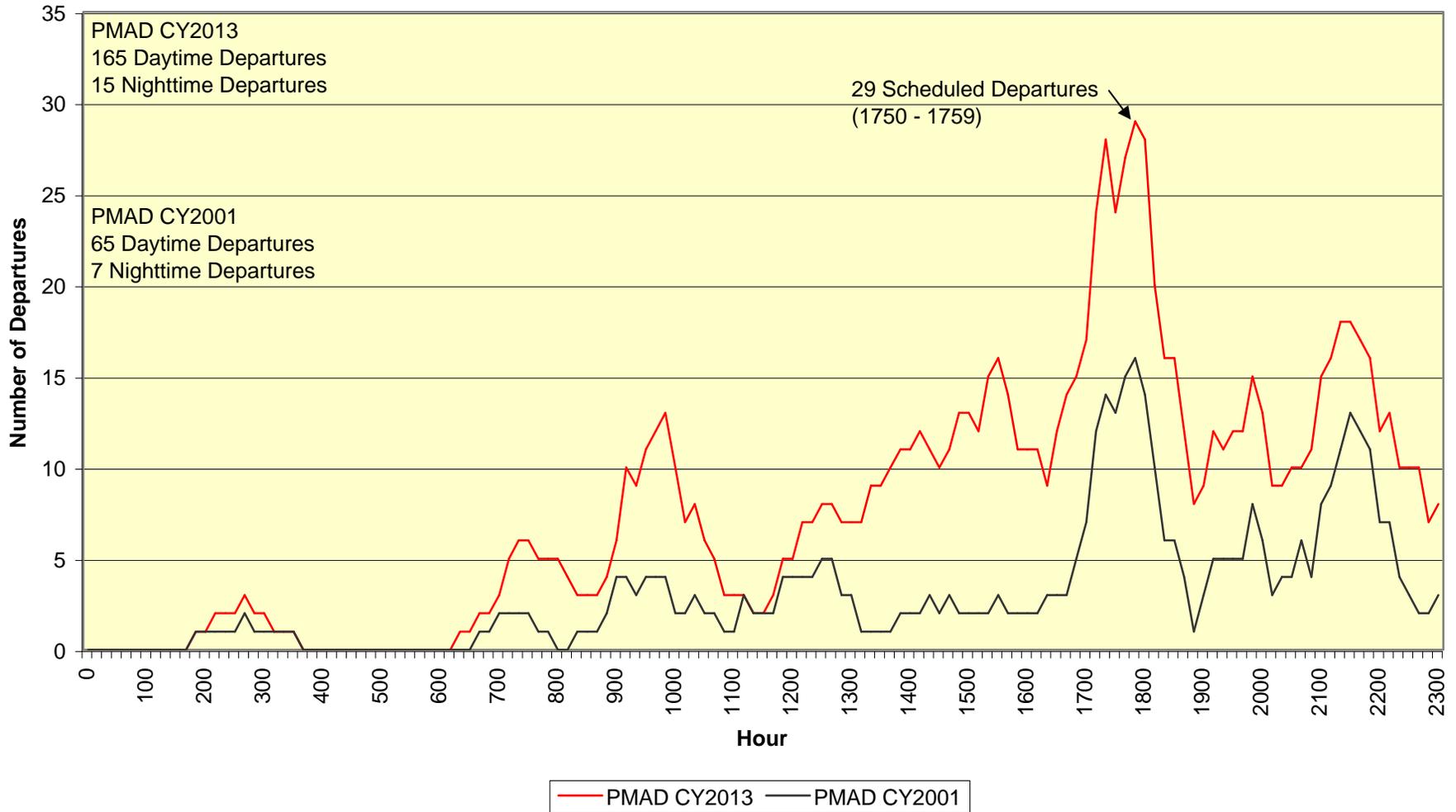
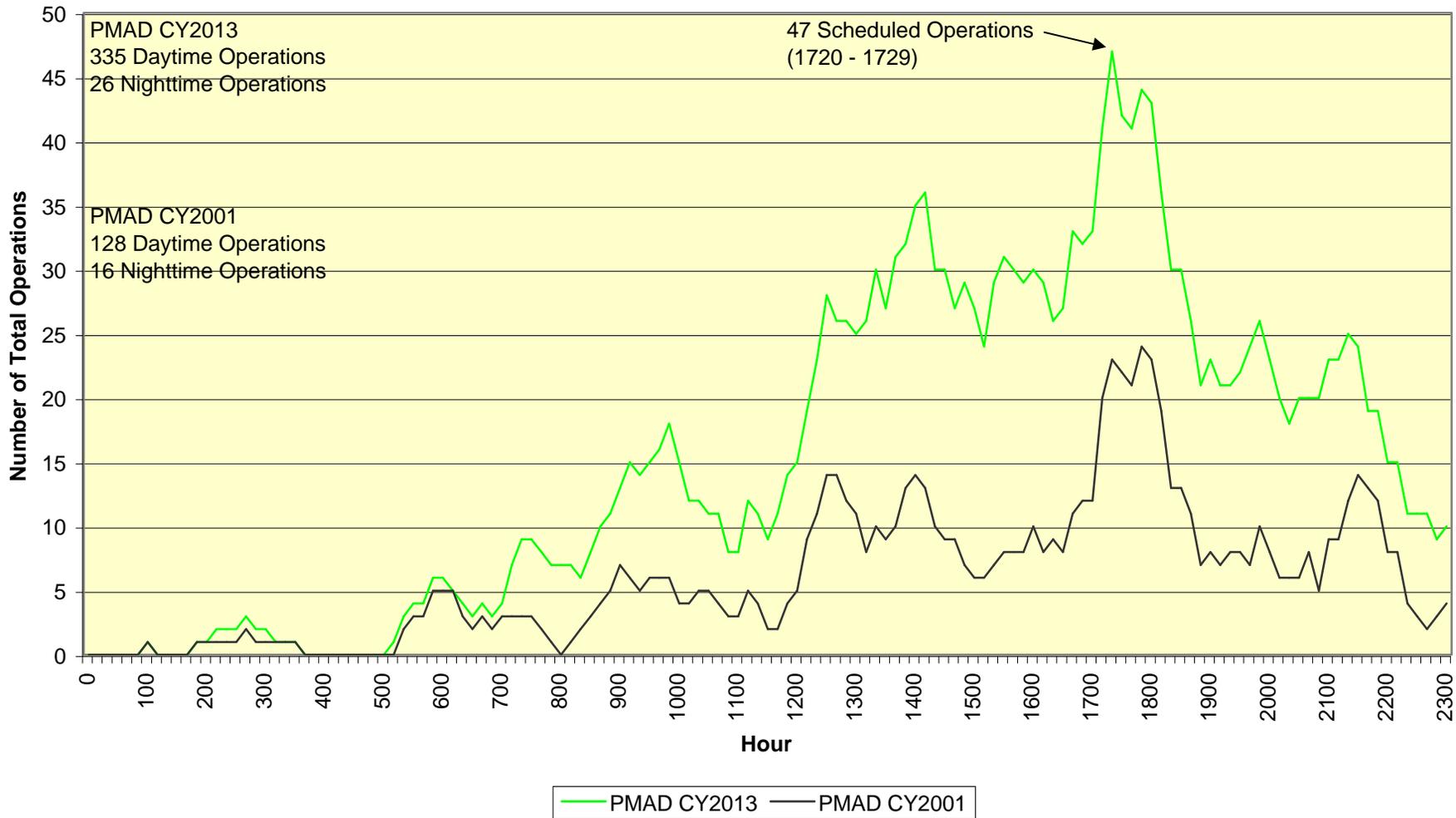


Exhibit D-1F
O'Hare International Airport - Scheduled International Operations (PMAD CY2013)
Sum of Previous Hour



APPENDIX E

Exhibit E-1A
O'Hare International Airport - Domestic Arrivals (PMAD CY2018)
Sum of Previous Hour

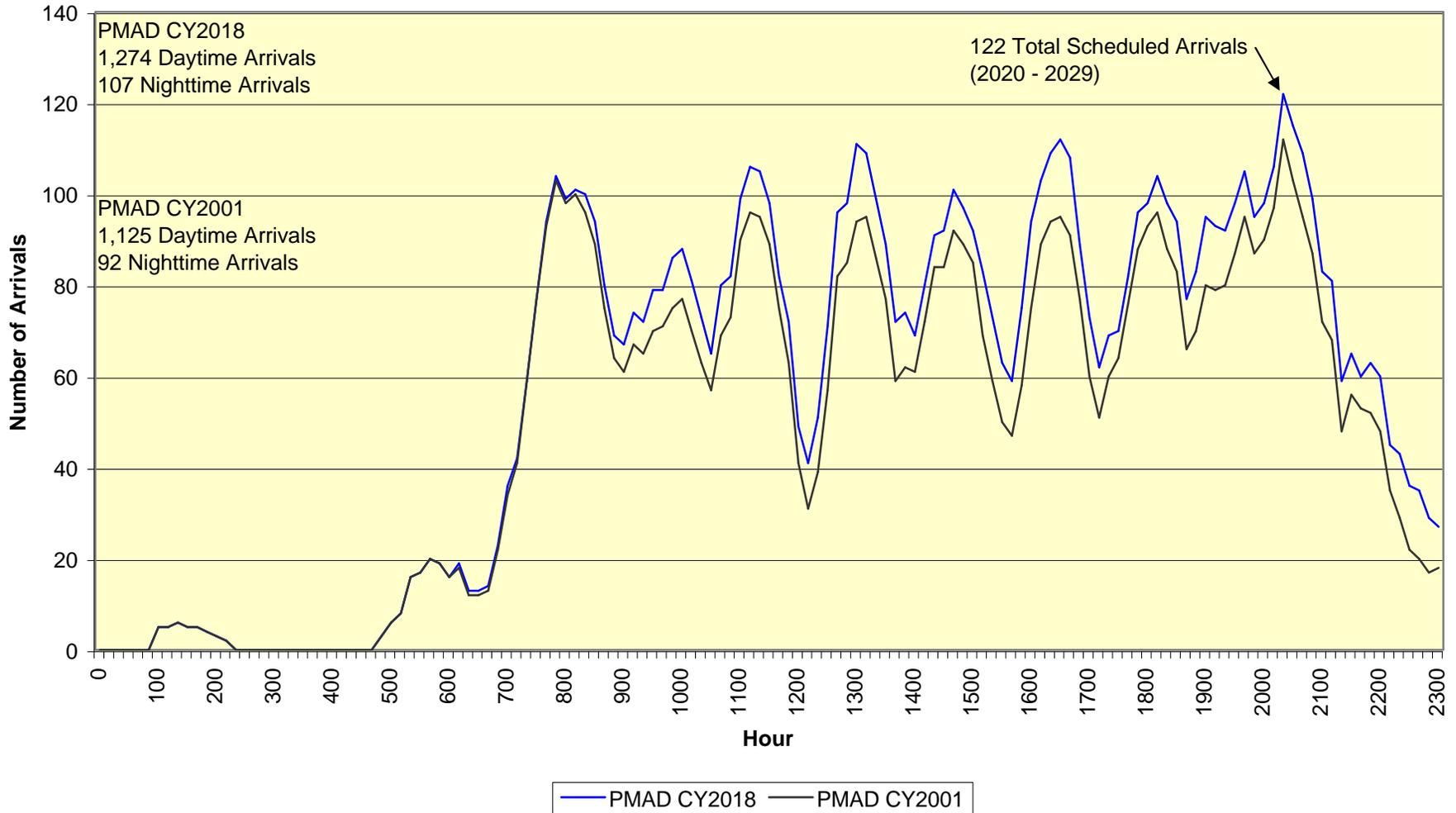


Exhibit E-1B
O'Hare International Airport - Domestic Departures (PMAD CY2018)
Sum of Previous Hour

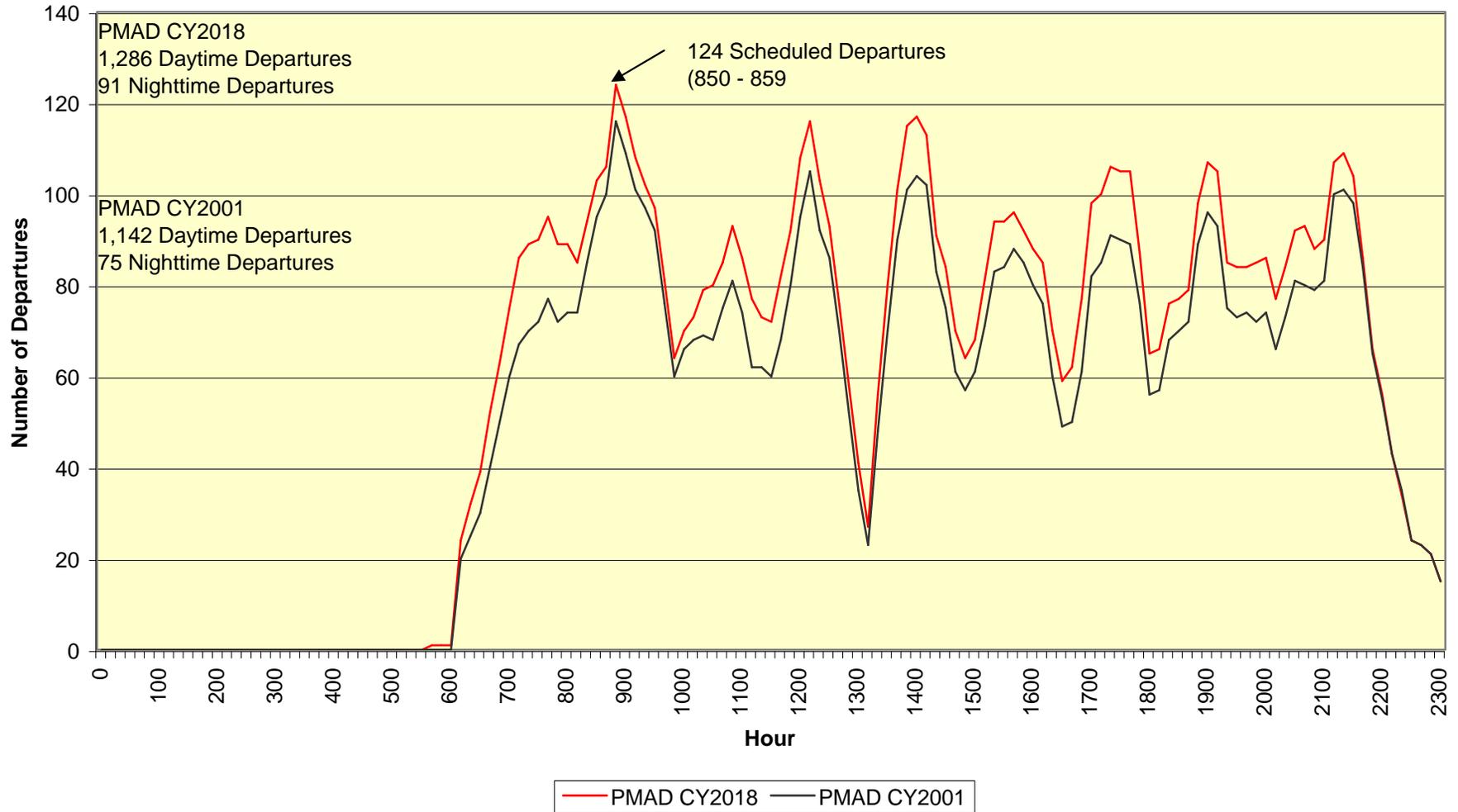


Exhibit E-1C
O'Hare International Airport - Scheduled Domestic Operations (PMAD CY2018)
Sum of Previous Hour

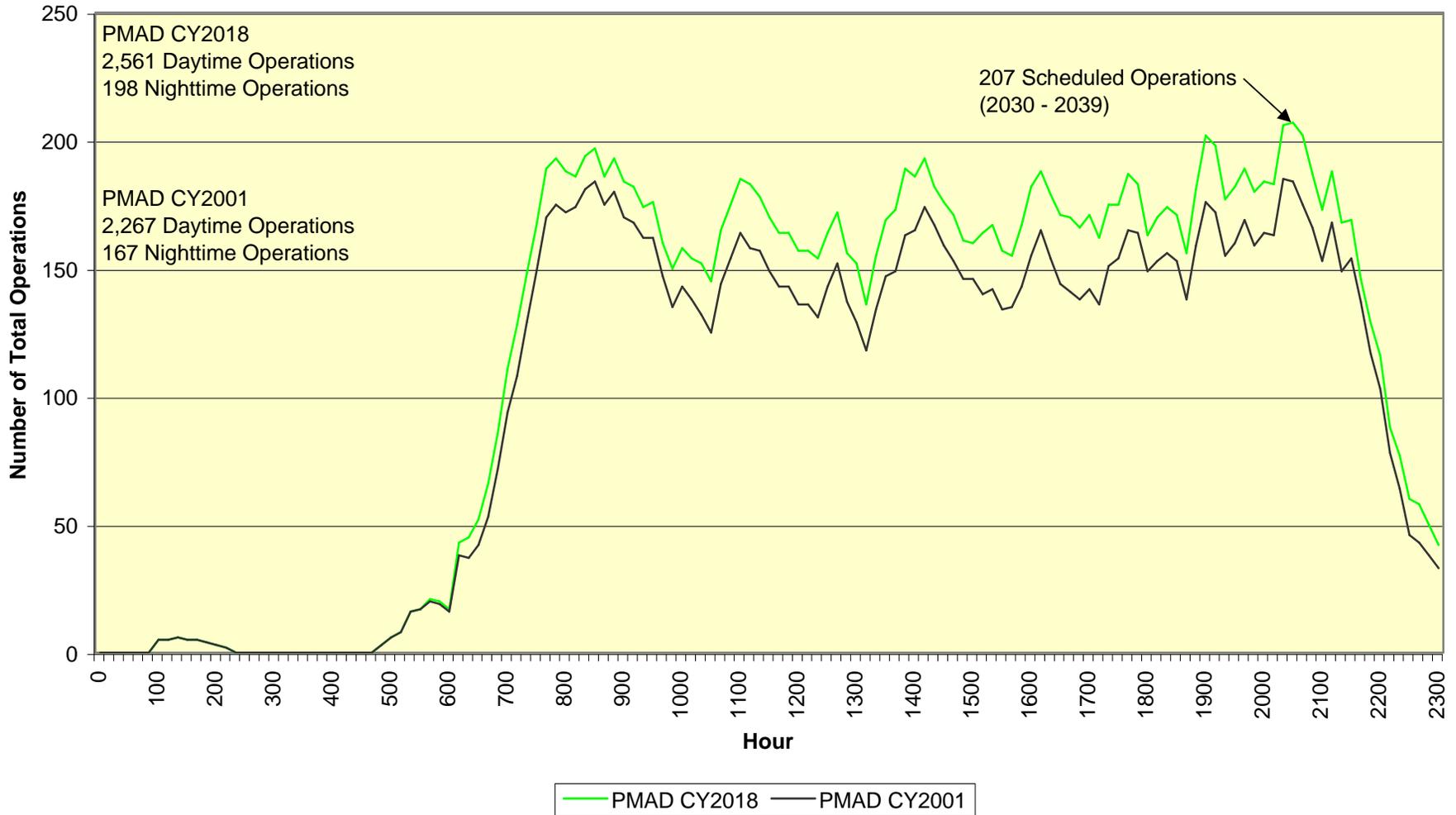


Exhibit E-1D
O'Hare International Airport - International Arrivals (PMAD CY2018)
Sum of Previous Hour

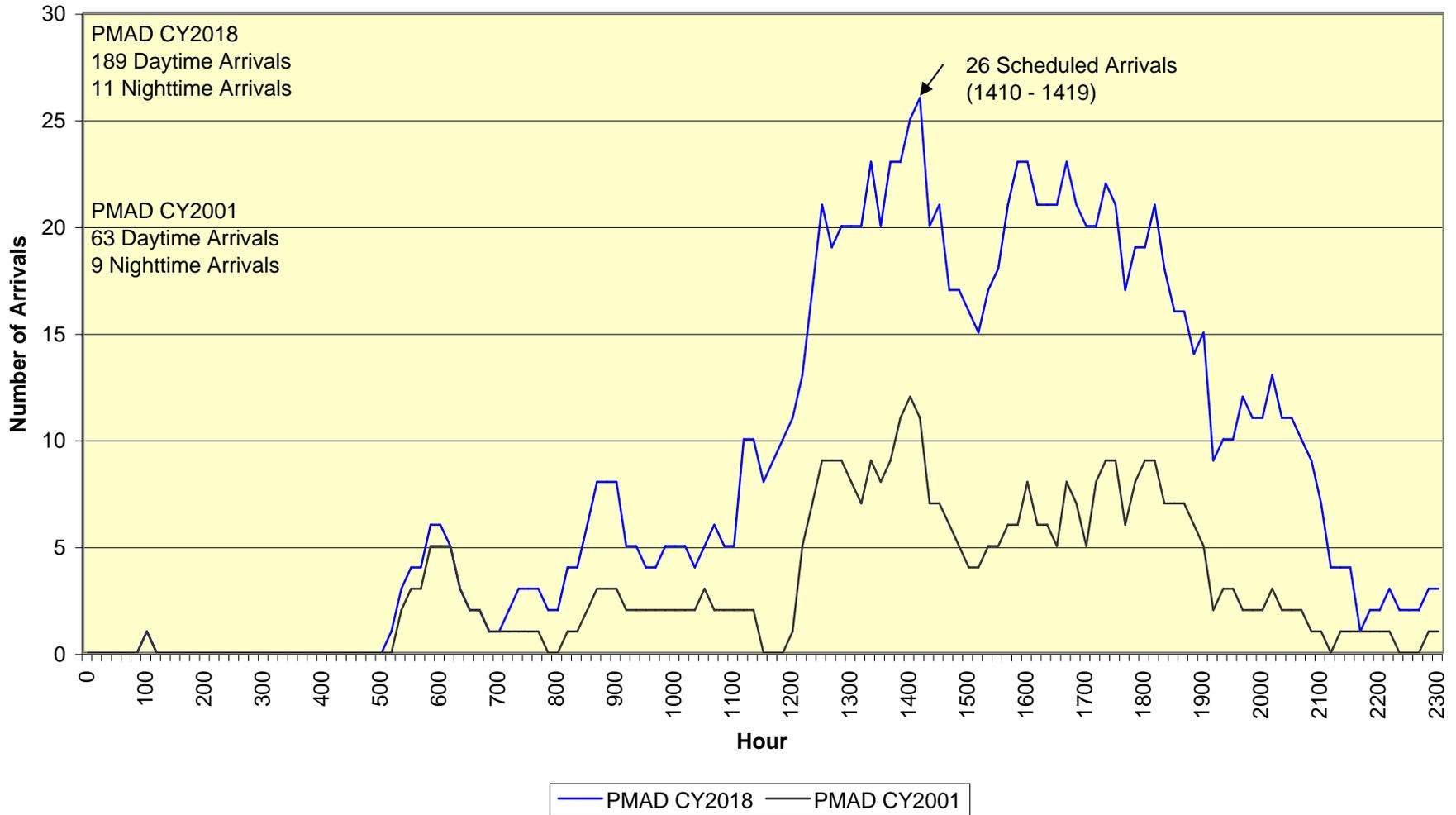


Exhibit E-1E
O'Hare International Airport - International Departures (PMAD CY2018)
Sum of Previous Hour

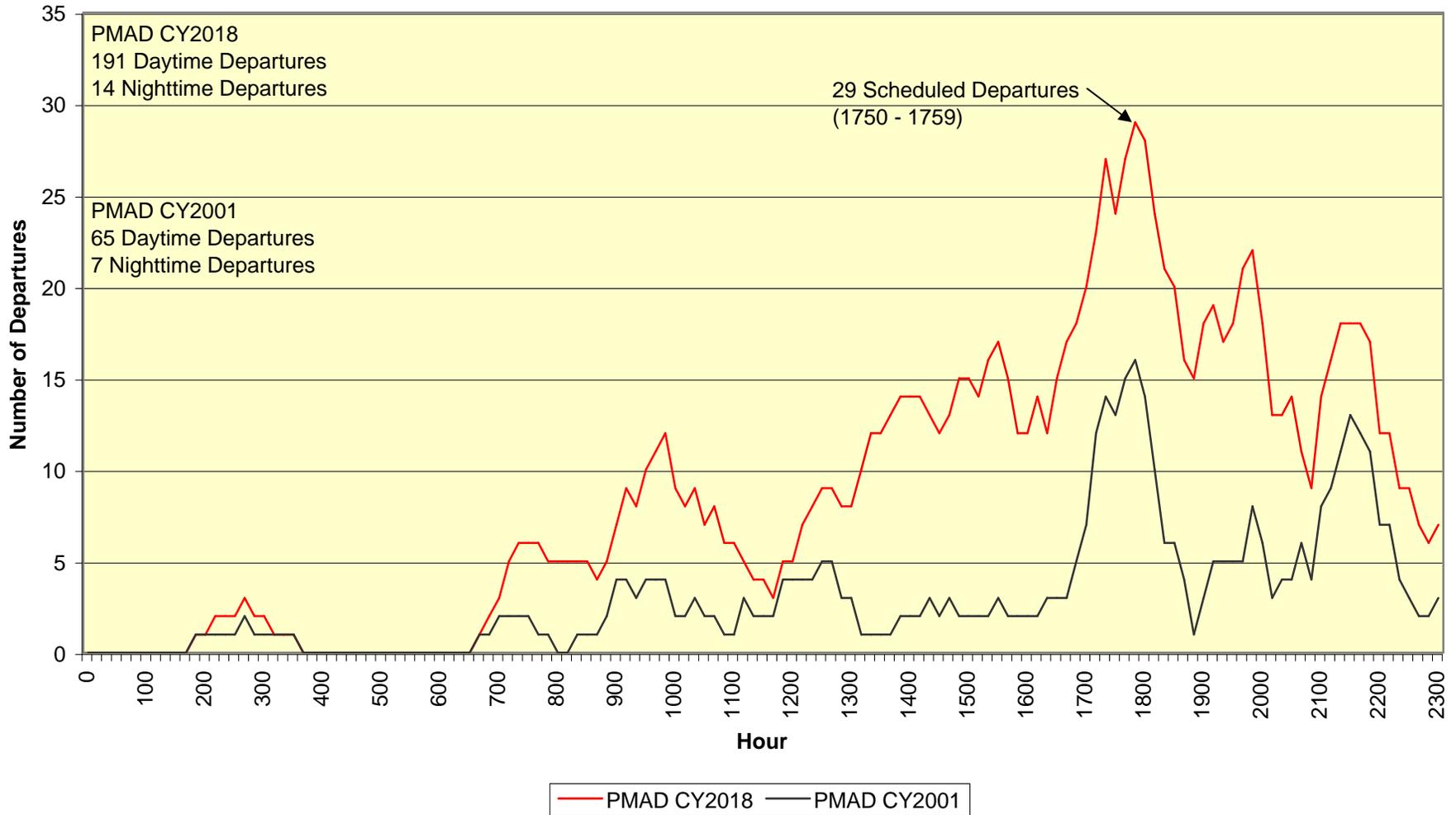


Exhibit E-1F
O'Hare International Airport - Scheduled International Operations (PMAD CY2018)
Sum of Previous Hour

