

Regional Aviation Activity Tracking Report



2012 Edition

April 2012

Prepared by the **Regional Airport Planning Committee**



METROPOLITAN
TRANSPORTATION
COMMISSION



Bay Conservation
and Development
Commission



Association of
Bay Area Governments

And prepared by

SH&E
an ICF International Company

TABLE OF CONTENTS

	<u>Page</u>
I. Introduction	1
II. Trends in Air Passenger and Air Cargo Activity	3
III. Trends in Aircraft Operations	7
IV. Trends in Airport Shares of Bay Area Air Passengers	10
V. Factors Related to SFO's Runway Capacity Issues	13
VI. Delays to Air Passengers Using Bay Area Airports.....	16
Appendix-Sources of Data	17

-List of Tables and Figures-

Figure 1: Air Passengers and Forecasts	5
Figure 2: Air Cargo and Forecasts.....	6
Figure 3: Aircraft Operations and Forecasts.....	9
Figure 4: Airport Shares of Bay Area Air Passengers	11
Figure 5-Scheduled Flights versus Hourly Runway Capacity at SFO	13
Figure 6-Average Seats and Passengers per Airline Flight at SFO	14
Figure 7-Airport On-Time Arrivals	15
Table 1-Air Passengers	3
Table 2-Air Cargo	4
Table 3-Annual Aircraft Operations.....	8
Table 4-Average Daily Airline Departures , August 2011.....	12

I. Introduction

Airports are an important part of the Bay Area's transportation infrastructure and provide the ability for Bay Area residents to travel and conduct business throughout the world. They also support the local Bay Area economy in many ways, from providing airport and airline jobs for Bay Area residents, to maintaining the Bay Area's position as one of the world's most frequented tourist destinations, to providing air cargo services for a wide range of businesses. The primary responsibility for planning for the Bay Area's future aviation needs rests with the airports themselves and the FAA.

However, airport development decisions also raise a number of issues that are regional in nature concerning surface transportation, future land use planning and potential impacts on San Francisco Bay. Because of these regional issues, a joint committee of the Association of Bay Area Governments (ABAG), Bay Conservation and Development Commission (BCDC), and the Metropolitan Transportation Commission (MTC) was formed a number of years ago to assess how much air passenger and air cargo growth will occur in the region in the future and the best approaches for handling this growth from a regional perspective, i.e., approaches that provide the most benefit to air travelers and the economy while minimizing adverse environmental consequences. This joint Committee, the Regional Airport Planning Committee, or "RAPC", completed its latest analysis of strategies to serve long-range Bay Area aviation demand in 2011.

Based on the results of its latest comprehensive review, RAPC believes the following strategies will serve the Bay Area aviation needs through 2035:

- Shift more air passengers to Oakland and San Jose Airports
- Provide additional airline service at Sonoma County Airport for North Bay air passengers
- Support further airline service expansion at airports outside the Bay Area (Sacramento, Stockton, and Monterey), whose air passengers currently use Bay Area airports
- Implement key elements of the FAA's NextGen air traffic system to enable more efficient airspace and runway operations
- Implement new demand management approaches at SFO to better match airline fleets and schedules with the airport's runway capacity
- Use High Speed Rail to serve a portion of the air passengers traveling between the Bay Area and other parts of California (while the Bay Area could serve 2035 demand without a HSR system, HSR would relieve pressure on airport runways to handle growing demand while also providing additional environmental benefits for the region)

Purpose of this Report

Long-range aviation plans are subject to change as the underlying conditions and assumptions change. Therefore it is important to constantly monitor aviation activity levels at all three major Bay Area airports--Oakland International (OAK), San Francisco International (SFO), and Mineta San Jose International (SJC)—to determine when significant runway capacity problems are likely to occur and to ensure that the strategies above can be implemented in time to mitigate any future capacity problems.

The most important trends to track in this regard are listed below:

- The number of air passengers using each airport
- The amount of air cargo handled at each airport
- The total number of flights handled at each airport, including passenger, air cargo, General Aviation, and military flights
- Airline decisions about which Bay Area airports and destinations they serve and how frequently
- Flight delays at each airport

The report provides data for the period from 2007 through 2011 (2007 was the base year for the latest RAPC study and 2011 is the most current year for which data is available). The information included in this report is drawn from airport reports and FAA databases and can be easily updated each year.

Additionally, the information above will help RAPC and the Bay Area airports determine when adjustments to their long-range activity forecasts used for planning purposes may be required. If the tracking information shows that forecasted air passenger, air cargo, and aircraft operations are much lower or much higher than currently projected for the future, RAPC and the Bay Area airports will need to determine the cause (s) for the differences and adjust the forecasts accordingly.

II. Trends in Air Passenger and Air Cargo Activity

Bay Area aviation activity continues to be affected by the overall pace of the economic recovery. Between 2007 and 2011, the three main measures of regional aviation activity--air passengers, air cargo, and commercial flights-- have declined, although not at all three airports. The number of air passengers has risen at San Francisco Airport, where airlines continue to add flights. Air cargo volumes and air cargo flights declined at all three airports.

The activity forecasts from RAPC's latest study assumed a solid economic recovery would be well underway by 2011, so the "forecast" for 2011 was essentially a return to airport activity levels that occurred four years prior in 2007. Due to the continuing weakness of the recovery, the 2011 activity forecasts over-predicted actual activity levels. However it is too soon to determine if this is a longer term trend and a major adjustment or update to the RAPC forecasts will be required.

Air Passengers

- Total Bay Area air passengers using the three major airports dropped 3.6% between 2007 and 2011
- Between 2007 and 2011, SFO gained 5,480,000 annual air passengers, a 21% increase, while OAK and SJC lost 7,650,000 annual air passengers, a 31% decrease
- The share of Bay Area air passengers travelling internationally has slightly increased from 2007 to 2011, from 15.3% to 16%.
- The actual number of Bay Area air passengers using the three main Bay Area airports is 3.6 % lower than projected by RAPC for 2011.

Table 1
Air Passengers

	OAK	SFO	SJC	Total
2011				
Domestic	9,074,541	31,787,331	8,187,813	49,049,685
International	192,029	9,013,021	169,571	9,374,621
Total	9,266,570	40,800,352	8,357,384	58,424,306
2007				
Domestic	14,455,632	26,354,276	10,505,188	51,315,096
International	160,962	8,962,965	153,201	9,277,128
Total	14,616,594	35,317,241	10,658,389	60,592,224

Air Cargo

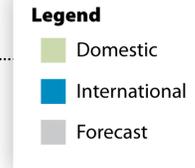
- Air cargo volumes (freight and mail) continue to drop at all three Bay Area airports from 2007 levels: OAK (-23%), SFO (-32%), SJC (-52%)
- Total Bay Area cargo volumes are down 29% from 2007, largely due to the continuing softness in the economy
- Between 2007 and 2011, air freight volumes declined more than air mail (29% versus 23%)
- Current air cargo volumes are 29% lower than projected by RAPC for 2011.

Table 2
Air Cargo (tons)

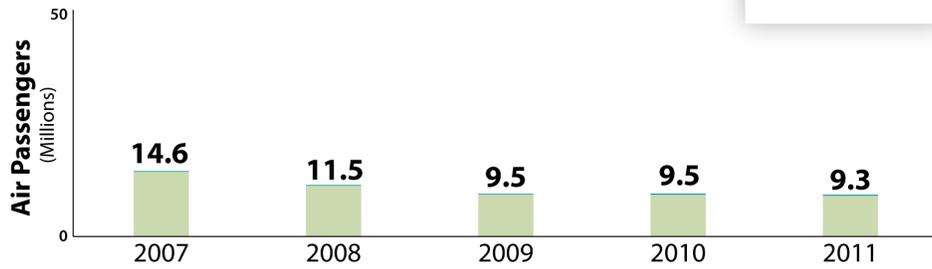
	OAK	SFO	SJC	Total
2011				
Freight	540,051	375,694	43,318	959,063
Mail	10,517	45,481	722	56,720
Total	550,568	421,175	44,040	1,015,783
2007				
Freight	706,700	555,549	89,849	1,352,098
Mail	7,165	65,085	1,577	73,827
Total	713,865	620,634	91,426	1,425,925

Figure 1

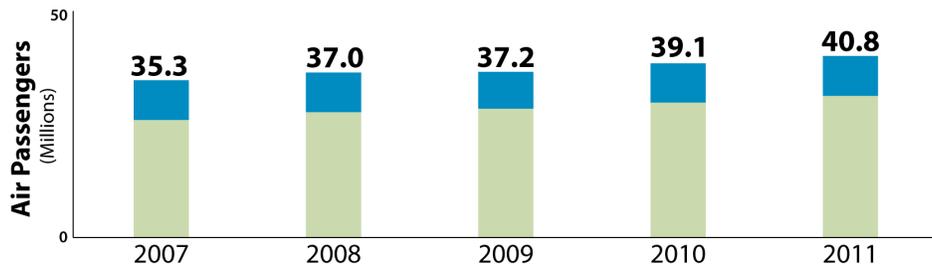
Air Passengers and Forecasts



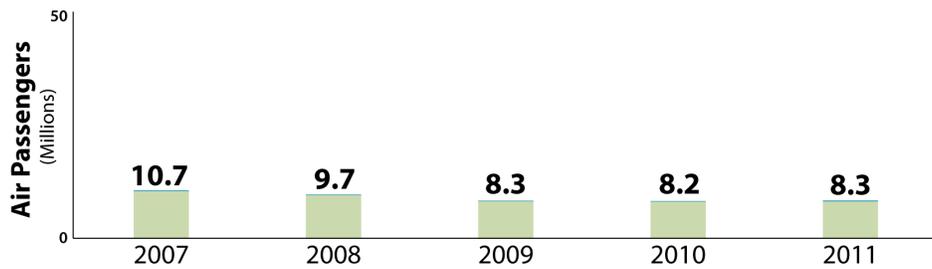
Oakland Airport



San Francisco Airport



San Jose Airport



Bay Area Total

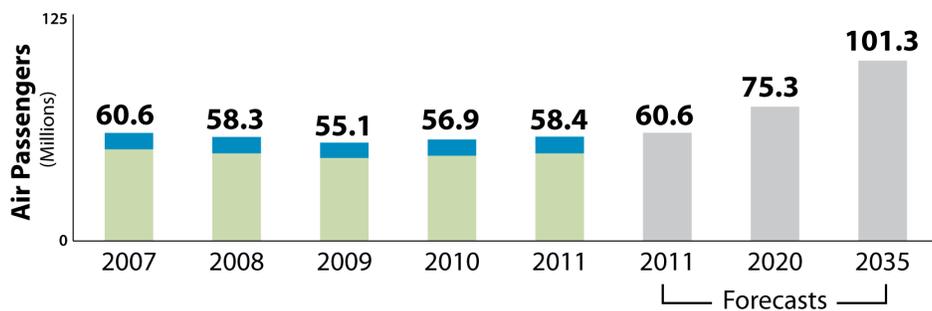
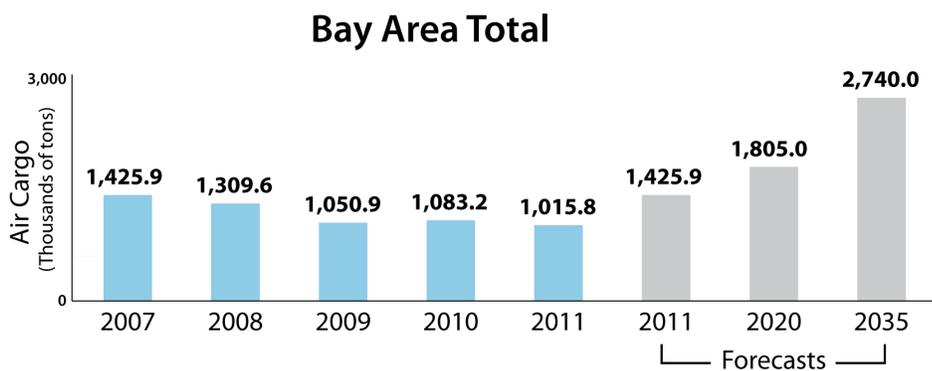
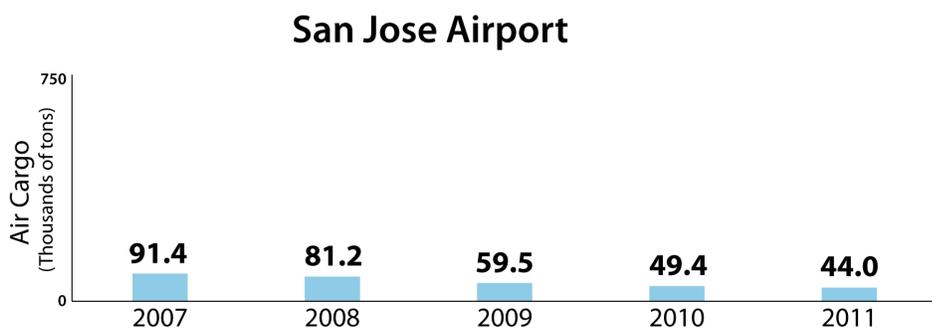
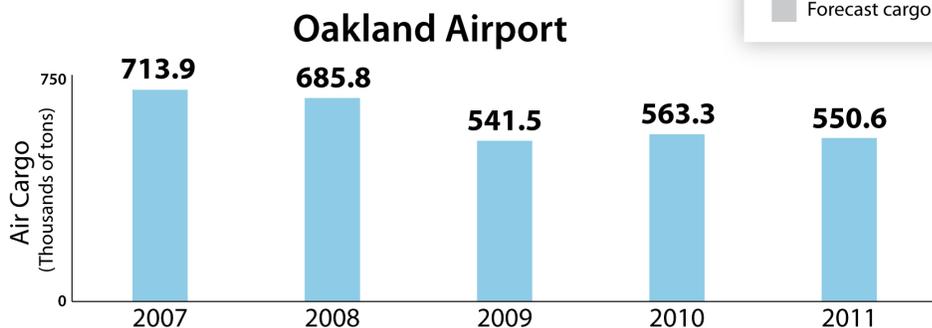


Figure 2

Air Cargo and Forecasts

Legend

- Actual cargo
- Forecast cargo



III. Trends in Aircraft Operations

Figure 3 shows recent trends in the number of annual aircraft operations (takeoffs and landings) at each Bay Area airport. Airport runway capacity problems occur when the number of flights at an airport approaches or exceeds the ability of the airport's runways to handle these flights without large delays. Figure 3 also shows the estimated runway capacity for each airport expressed as a range in annual operations. Airline passenger flights (Air Carrier and Air Taxi flights by smaller regional airlines, including some on demand passenger flights) are the predominant users of the runways at the three major Bay Area airports (81% of operations). Air cargo flights constitute only a small percent of airport activity and are not expected to be a significant contributor to runway capacity problems in the future.

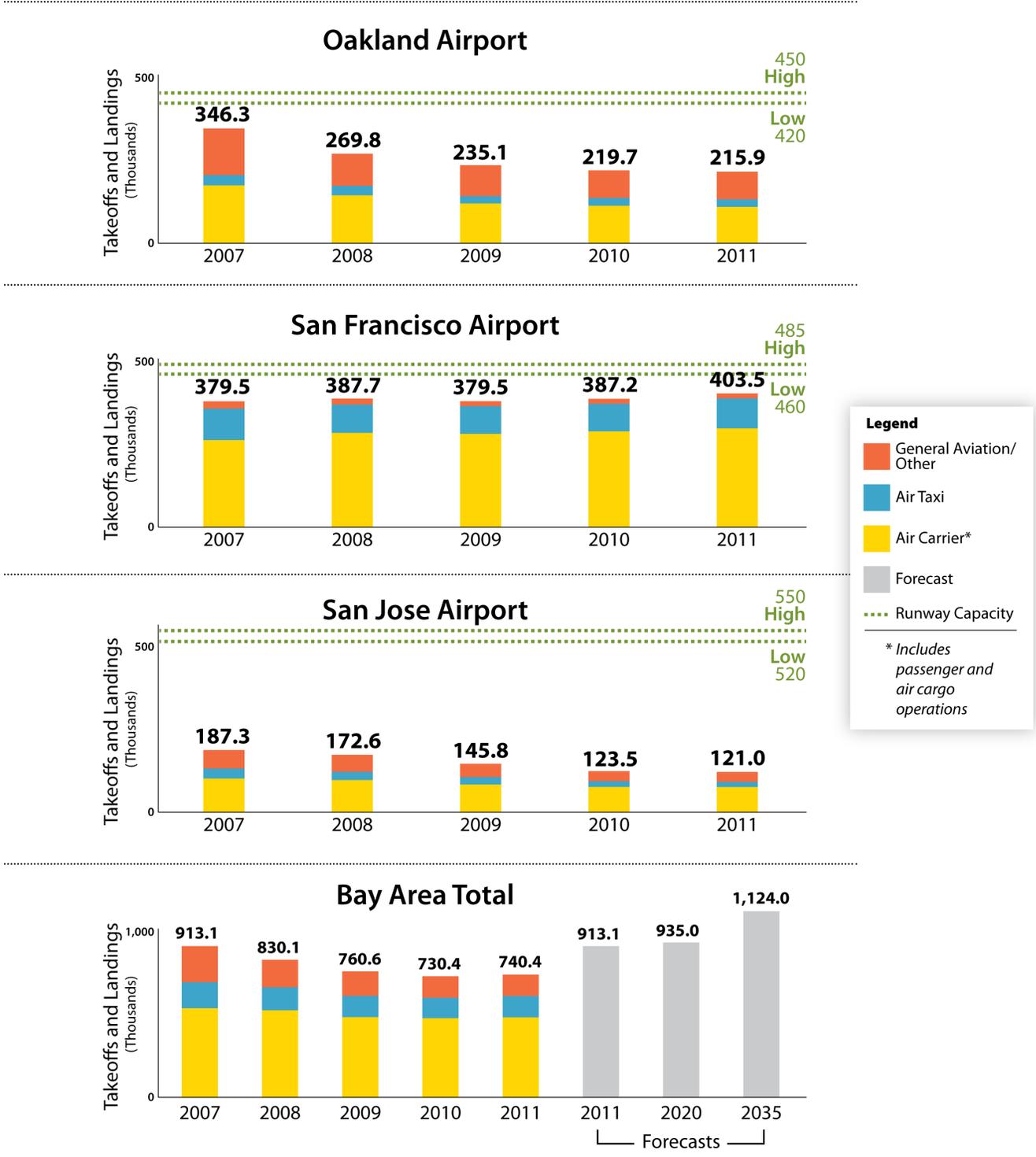
Flights by small private aircraft used for business and personal travel (General Aviation) range from 4% of runway operations at SFO to 39% at OAK. Some of these General Aviation flights takeoff and land on the same runways as the airlines, although other General Aviation airports in the region accommodate the bulk of the region's General Aviation activity.

- There were 195,000 fewer aircraft operations (takeoffs and landings) at the three major Bay Area airports in 2011 compared to 2007, a 21% decline.
- Total aircraft operations at OAK and SJC decreased by 219,000 between 2007 and 2011, while total aircraft operations at SFO increased by 24,000 (6%)
- General Aviation and military flights declined the most between 2007 and 2011 (41%), compared to Air Carrier and Air Taxi (11%).
- Total flights at the three major Bay Area airports are 21% lower than projected by RAPC for 2011.
- SFO is the closest to its runway capacity and most likely to face significant capacity issues in the future (RAPC forecasted significant capacity issues at SFO after 2020)

Table 3
Annual Aircraft Operations

	OAK	SFO	SJC	Total
2011				
Air Carrier	108,997	290,849	73,094	472,940
Air Taxi	22,980	90,582	15,592	129,154
Air Cargo	NA	6,782	1,932	8,714
GA & Military	83,896	15,351	30,348	129,595
Total	215,873	403,564	120,966	740,403
2007				
Air Carrier	141,735	254,995	97,702	494,432
Air Taxi	31,024	95,582	30,452	157,058
Air Cargo	32,174	7,140	3,242	42,556
GA & Military	141,417	21,783	55,801	219,001
Total	346,350	379,500	187,197	913,047
NA: Not available				

Figure 3
Aircraft Operations and Forecasts



IV. Trends in Airport Shares of Bay Area Air Passengers

A key element of RAPC's long-range strategy to serve Bay Area aviation demand is to relieve pressure on SFO's runways, which cause major flight delays in poor weather, by expanding use of Oakland and San Jose Airports. Both of these airports have the terminal facilities and runway capacity to accommodate increased flights. However, because the airlines decide where they want to add service, it is difficult to forecast how many passengers will use each Bay Area airport in the future. RAPC's preferred 2035 distribution of airport passengers is termed "Scenario B" and is shown in Figure 4. In this Scenario, both OAK and SJC would serve a larger percentage of the domestic air passenger market, while the bulk of the international airline flights would continue to use SFO (which handled 96% of the international air travelers in 2011). Rising delays at SFO (and increased costs) may be one factor that would spur greater airline interest in OAK and SJC airports in the future.

- San Francisco has experienced major new service additions by low cost airlines such as Southwest, Virgin America, and JetBlue. As a result, SFO's share of domestic air passengers increased from 51 % in 2007 to 65 % in 2011.
- SFO's share of total Bay Area air passengers also increased between 2007 and 2011, from 58% in 2007 to 70% in 2011. OAK and SJC's combined share of Bay Area air passengers dropped from 42% in 2007 to 30% in 2011.
- Most of the larger Domestic air passenger markets generate enough air passengers to support competitive service from all three Bay Area airports; however, as shown in Table 4, many of the 25 largest Domestic markets have very limited or no airline flights from OAK or SJC.

Figure 4

Airport Shares of Bay Area Air Passengers

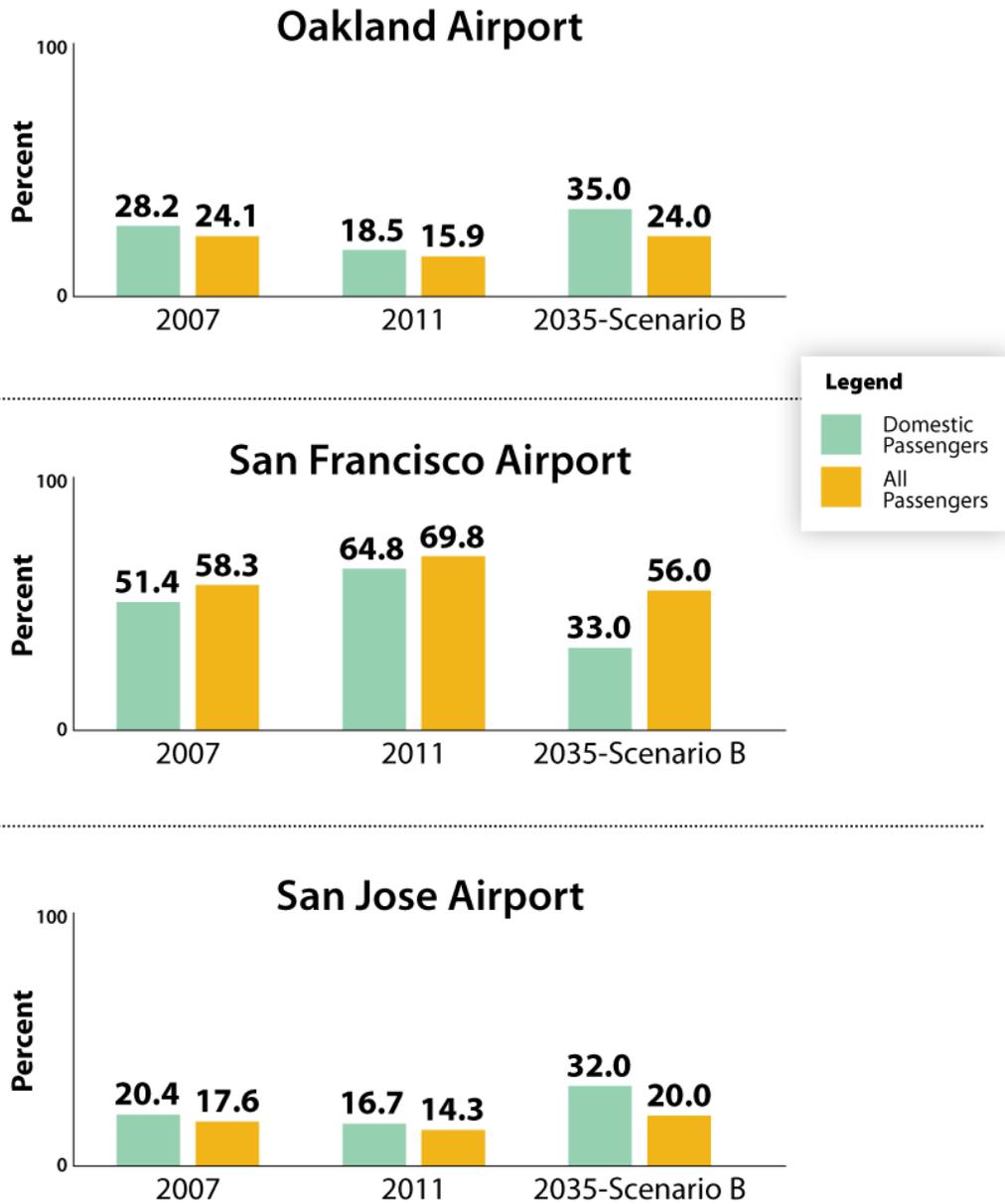


Table 4

Average Daily Airline Departures, August 2011

Destination	OAK	SFO	SJC
Los Angeles Area*	47.3	73	40.8
New York	1	31.3	1
San Diego	11.4	19.3	9.6
Las Vegas	9.1	24.4	8.5
Seattle/Tacoma	11.6	17.6	8.5
Chicago	3.7	28.3	3
Phoenix	10.4	13.9	10.4
Portland	9.5	11	8.4
Denver	5.7	17.5	8.2
Washington	1	11.6	0
Boston	0.9	11.7	1
Honolulu	1	6.8	1
Dallas/Fort Worth	0	17	5.8
Atlanta	0	10.9	1
Houston	0	7.9	2.8
Salt Lake City	8.4	9.3	4.4
Minneapolis	0	9.2	1.9
Philadelphia	0	8	0
Kahului	1.5	2.1	1
Austin	0	3.9	1.9
Detroit	0	4	0
Orlando	0	2.2	0
Baltimore	0	2.9	0
Albuquerque	2.9	1.1	0
Kansas City	1	2.9	0
Total	126.4	347.8	119.2

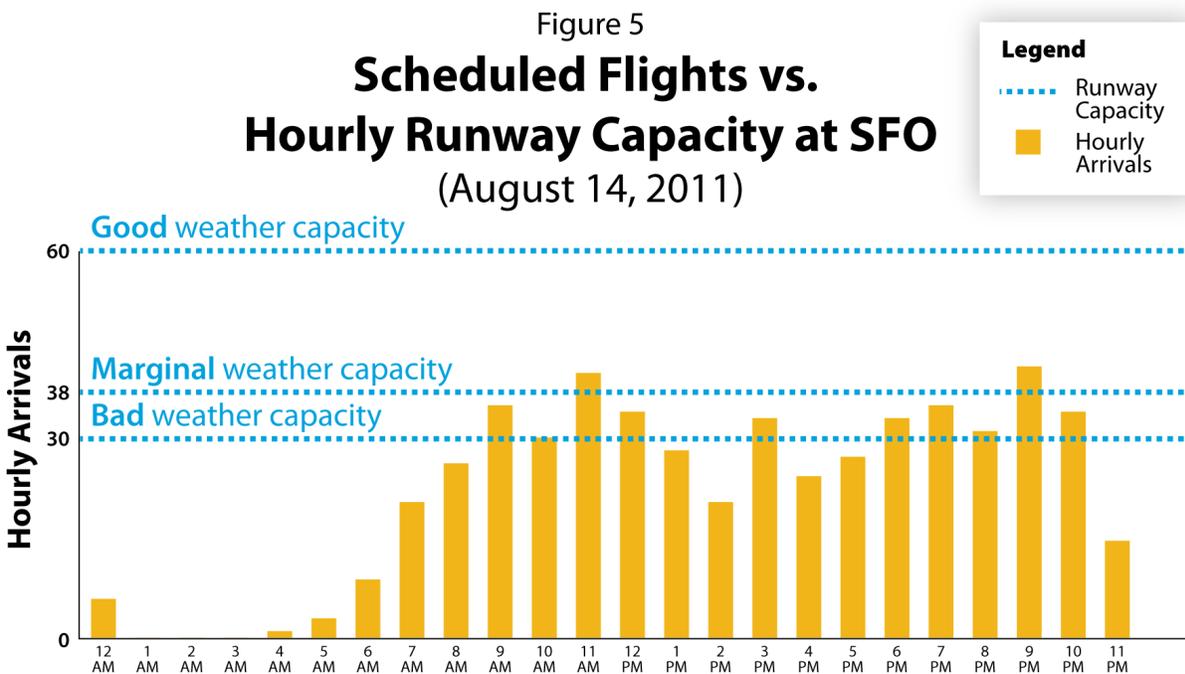
Note: Markets are ranked from highest number of air passengers to lowest. Destinations shown in **Bold** have limited (compared to SFO) or no air service from Oakland or San Jose Airports.

* Includes Los Angeles, Burbank, Long Beach, Ontario, and Orange County Airports

V. Factors Related to SFO's Runway Capacity Issues

Airline Schedules

SFO's well-known flight delay problems during poor weather are caused by the close spacing between its two main landing runways (Runways 28R and 28L). During bad weather and some marginal weather conditions one runway is closed for safety reasons, and the FAA must hold flights at other airports until SFO is able to accept these flights. Figure 6 compares airline flight schedules for August 2011 with SFO's hourly runway capacity under various weather conditions --good weather (clear weather, the predominant type of weather), marginal weather (often associated with Summer fog), and very bad weather (generally associated with storms and very low visibility conditions requiring aircraft to use instrument navigation to land). While the current number of scheduled flights at SFO is well below the airport's hourly capacity in good weather, Figure 6 shows that these schedules can still cause delay problems in marginal and bad weather as the number of arriving flights is close to or exceeds the airport's runway capacity during certain hours. The FAA has proposed working with the airlines at SFO to make voluntary changes to their schedules to address this issue.

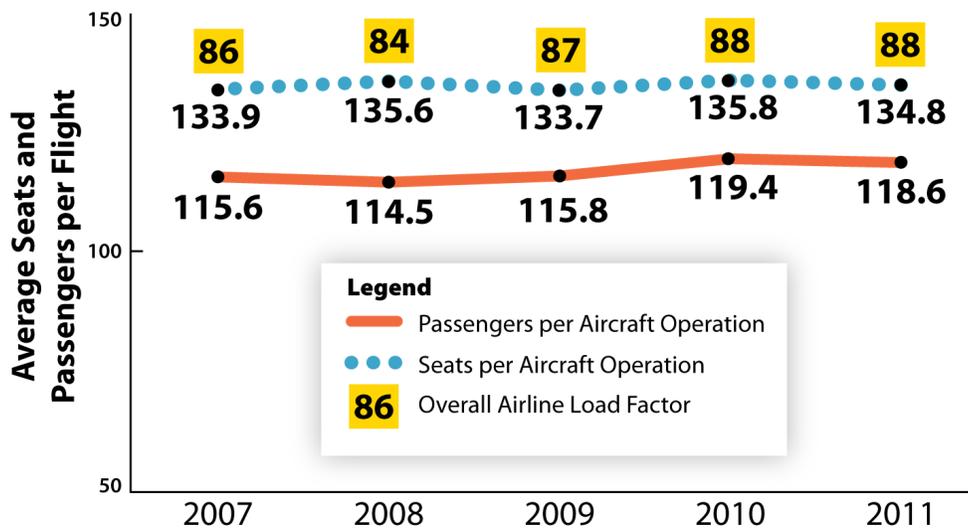


Average Passengers per Flight at SFO

One way airports can handle more passengers with existing runways is for the airlines to use larger aircraft that can carry more passengers per flight (e.g., large widebody jets carry several hundred passengers while smaller Regional Jets and Turboprops carry 30-70 passengers). Also the more seats that filled (load factor), the more passengers there are per flight. Figure 7 illustrates the trend in average seats per flight and load factors for the peak travel month of August between 2007 and 2011. Because SFO is a connecting hub for United Airlines, smaller Regional Jets and Turboprops are more economical to use for feeder service from outlying communities than larger passenger aircraft. On the other end of the spectrum, the growing international market requires much larger widebody aircraft on these long distance routes. Between 2007 and 2011 the average number of passengers carried per flight at SFO has increased slightly from 115.6 to 118.6. This is a beneficial trend, and RAPC's long-range forecasts indicate a gradual continuation of this trend in the future.

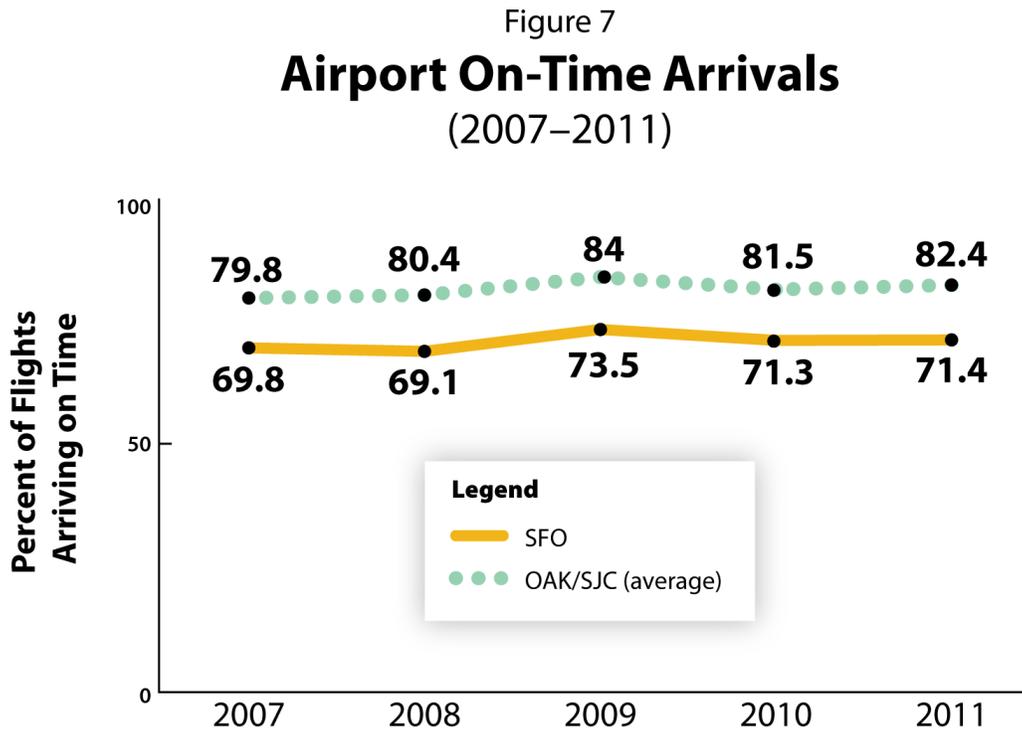
Figure 6

**Average Seats and Passengers
Per Airline Flight at San Francisco Airport
(August)**



VI. Delays to Air Passengers Using Bay Area Airports

Of course, the main impact of airfield capacity problems is on air passengers whose flights are delayed or cancelled. The US Department of Transportation keeps statistics on the percent of flights that are delayed more than 15 minutes at each of the nation's larger airports. Figure 8 shows this data for 2007 through 2011. Typically SFO is one of the most delayed airports in the country, ranking in the top 5 of major airports with the poorest on time performance. In contrast, a larger number of flights at OAK and SJC arrive on time as these airports are not affected by poor weather to the same extent as SFO. This means that airlines and air passengers using these airports will have more reliable service, another factor that may lead to greater airline interest in expanding service at these airports in the future.



Appendix

Data Sources for Air Passengers and Air Cargo

Air passenger and air cargo data can be obtained from the airport operators. All three airports regularly post airport traffic data on their websites. Current links to these data sources are summarized below:

OAK: http://www.flyoakland.com/airport_stats_monthly_report.shtml

SFO: <http://www.flysfo.com/web/page/about/news/pressres/stats-2009.html>

SJC: <http://www.flysanjose.com/about.php?page=activity/activity&exp=3&subtitle=Activity+and+Financials+|+Airport+Activity>

-Oakland Airport provided separate information for the number of international air passengers

Data Sources for Aircraft Operations

Each airport reports total aircraft operations on their website, but Oakland Airport's website does not break down aircraft operations into the type of operation; this data was provided separately by OAK and General Aviation/Military operations were obtained from the FAA website below. San Jose Airport regularly reports cargo flights on its website, but this information was provided separately by OAK and SFO.

FAA information on the number of flights at each airport by Air Carrier, Air Taxi, General Aviation and Military can be obtained from the FAA's Air Traffic Activity Data System (ATADS) through the following link:

FAA ATADS: <http://aspm.faa.gov/opsnet/sys/Main.asp?force=atads>

Data Sources for Average Daily Aircraft Departures to Top 25 Domestic Destinations and Seats per Airline Flight

San Francisco Airport provided this information from the Official Airline Guide

Airport On Time Arrivals

U.S. DOT Airline On-Time Statistics (downloadable data For all Bay Area airports):

http://www.transtats.bts.gov/Fields.asp?Table_ID=236

Airport Contacts

For further information, contact:

Kristi McKinney (Oakland International Airport): cmckenney@portoakland.com

John Bergener (San Francisco International Airport): john.bergener@flysfo.com

Cary Greene (Mineta San Jose International Airport): cgreene@sjc.org