

FINAL REPORT

BART-Oakland Airport Connector Ridership Update

Prepared for

BAY AREA RAPID TRANSIT DISTRICT



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Chapter 1

INTRODUCTION

The Bay Area Rapid Transit (BART) District is planning to implement an Automated Guideway Transit (AGT) connection to link the Oakland International Airport (OAK) with the Coliseum/Airport BART Station. This Oakland Airport Connector (OAC) AGT system would replace the existing connecting bus service (AirBART). This report is an update to the initial ridership forecasting analysis for the OAC AGT system that was completed in October 2006 and revised in June 2008. The June 2008 review revisited the validity of the original OAK Master Plan activity projections in light of recent declines in air service at OAK and airline industry events including high jet fuel prices and airline bankruptcies and mergers. Since the 2008 review conditions have continued to deteriorate at OAK. In 2007 airport air passenger traffic peaked at 14.6 million annual passengers (MAP). In 2008 the air passenger flows declined by 21 percent to 11.5 MAP. During the same period ridership on the Air BART bus service declined by 25%, and accordingly the percent of the air passengers which used the Air BART bus service (mode share) declined from 8.9% to 8.4%. The statistics for the early months of 2009 indicate that these declines in air passenger traffic and Air BART usage are continuing into this year.

The purpose of this report is to reassess the near term and long term ridership potential of the planned OAC AGT system in light of these dramatic changes in the usage of OAK. Two basic steps were involved. The first was to conduct a review of the impacts that the current volatile economy and the changes in the national and local commercial aviation marketplace are having on air passenger activity at OAK, and at the other airports in the region. This review allowed the development of updated MAP forecasts for OAK through the year 2030 and is presented in Chapter 2. The second step was to use the revised MAP forecasts and updated information about AirBART use, airport parking costs and other factors to develop updated ridership forecasts for the OAC AGT system. This information is presented in Chapter 3.

In all cases a range of forecasts; low, medium and high have been provided in recognition that at present the economic markets and other factors such as fuel availability and costs are extremely volatile and unpredictable. It is difficult to determine how long the current downturn will continue and at what rate the actual recovery will occur.

It is important to understand that this series of ridership forecasts, starting with the original forecasts prepared in the year 2006, were intended to serve a very specific purpose. The intent was to provide BART with forecasts which were based purposely on conservative assumptions to avoid overstating potential ridership. The reason for this was that the forecasts were intended to be used to assist BART and potential private sector partners in reaching decisions related to the financial viability of the project. As a result these forecasts are much more conservative than those which were developed for the project EIR/EIS. The ridership forecasting model used in the EIR/EIS took into consideration subjective factors such as the comfort, convenience, and reliability of the OAC AGT system as compared to the current bus service. In contrast, the investment oriented forecasts that are presented in this report purposely ignore these subjective factors and focus on quantifiable factors such as travel times and travel costs. As a result these forecasts are significantly lower than those presented in the EIR/EIS. It is also important to note that the forecasts are based on comparative travel times and costs for the entire trip to the airport, of which the trip on the OAC AGT would only be a small part. This approach is realistic in that it represents the full trip

that potential OAC AGT riders would experience, but it does tend to reduce the apparent significance of the time savings and other benefits offered by the AGT service compared to the current Air BART bus service.

Chapter 2

UPDATED AVIATION FORECAST

Introduction

This review is an update to the initial analysis that was completed in October 2006 and revised in June 2008. The June 2008 review revisited the validity of the original OAK Master Plan activity projections in light of recent declines in air service at OAK and airline industry events including high jet fuel prices and airline bankruptcies and mergers. The June 2008 review estimated that OAK would have 13 MAP (million annual passengers) in calendar year 2008. The actual MAP was 11.5, nearly 1.5 million fewer MAP than estimated. This was due to continued declines in the service available at OAK and weakened demand for air travel, which is described in detail below.

This review summarizes the changes that have occurred in the airline industry, in the Bay Area, and at OAK over the last eight months. It is important to note that given the current economic conditions throughout California, the US, and the world, it is difficult to estimate with a high degree of certainty what the next 12 months may bring in any industry. While we can look at the historical perspective of passenger demand and airline service changes, there is limited information currently available on anticipated trends in the economy or airline industry in the short term. Most analysts are predicting that the economy will continue to decline throughout 2009 until possibly the last quarter or possibly into early 2010. At issue is when decline will stop and at what rate the recovery will occur, first returning to 2007 levels and then seeing real growth beyond that timeframe.

An estimate of OAK MAP for calendar year 2009 has been developed based on industry research, trends analysis, and discussions with airport management from OAK. It is unknown whether or not these recent events will cause a fundamental shift in airline travel, with airports experiencing much lower growth than has occurred in the 1990s and again in recent history. These forecasts should be revisited once again in a year or so to determine their validity and ensure the assumptions used are appropriate given the anticipated economic shifts.

Recent Events Impacting the Airline Industry in the Near Term

The price of oil has fallen dramatically since the summer of 2008, when it reached \$147 a barrel. There was threat of several airline bankruptcies if oil prices remained at that level. In February 2009, the price of oil dropped to below \$40 a barrel. But there are different difficulties for the airlines today. We are currently amidst uncertain economic times. The economic recession combined with consumer concerns for what the future may hold, will no doubt continue to impact the demand for air travel.

Two million Americans have lost their jobs in the last three months and thousands of jobs are being lost daily. The unemployment rate in California has reached 9.3% in early 2009. Discretionary income is diminishing and job uncertainty has impacted the propensity for air travel. It is likely that leisure markets will take the biggest hit in 2009.

In addition, businesses are expected to continue to cut back this year with reductions in travel budgets. The loss of business travel will be the most detrimental of all losses to the airlines, which depend on the business travelers' ability and willingness to pay more for the convenience of air travel.

The dire economic times are already impacting the airline industry in 2009. According to Airlines Reporting Corporation (ARC), who facilitates payments between U.S. airlines and travel agencies (including online travel sites), January 2009 ticket sales were 25% less than January 2008 levels. Revenues were down even further at 27% from January 2008. Comparatively, U.S. airline capacity was only down about 9% between January 2008 and January 2009 according to *Official Airline Guide* data. With demand declining at larger levels than capacity reductions, this trend points to lower load factors and additional losses for the airline industry in 2009.

With lower demand expected and tight credit markets, airlines are expected to feel the pain of these economic times. In addition, IATA is predicting that aircraft manufacturers Boeing and Airbus will not deliver a large percentage of the aircraft they will produce in 2009, due to limited financing available and the decline in demand. Although most analysts are not predicting airline bankruptcies in 2009, if the economy continues to weaken and airlines start running out of assets to finance, airline bankruptcies may ensue in the short term.

Passenger and Service Declines at OAK

In calendar year 2008, OAK MAP had declined to 11.5, down 22% from 2007. OAK airport management is estimating a further drop to 10.2 MAP for FY2009 (July 2008-June 2009).

As noted in the analysis completed by WSA in June 2008, OAK was already experiencing large declines in service. ATA, Aloha, and Skybus ceased operations in April 2008 and American announced plans to withdraw from the market in September. Since that time, service has continued to decline (see table on subsequent page).

**CHANGE IN AVERAGE DAILY SCHEDULED DEPARTURES
OAKLAND INTERNATIONAL AIRPORT**

Carrier (incl. regional) Destination	1Qtr 2008	2Qtr 2008	3Qtr 2008	4Qtr 2008	1Qtr 2009	2Qtr 2009	No. Chg.	% Chg.	Carrier (incl. regional) Destination	1Qtr 2008	2Qtr 2008	3Qtr 2008	4Qtr 2008	1Qtr 2009	2Qtr 2009	No. Chg.	% Chg.
LOW COST CARRIERS									LEGACY CARRIERS								
Southwest									Alaska								
Los Angeles	19.0	17.8	16.8	16.2	15.0	15.0	-4.0		Seattle	6.6	6.7	6.6	5.7	5.0	5.0	-1.6	
Burbank	15.8	15.0	14.2	14.1	14.0	14.0	-1.9		Portland	4.7	4.7	4.8	4.8	4.8	4.9	0.1	
San Diego	17.0	16.4	15.2	15.2	13.3	13.3	-3.7		Orange County	4.8	1.4	-	-	-	-	-4.8	
Las Vegas	13.3	12.4	11.8	10.3	9.0	9.9	-3.4		Sun Valley	1.0	0.1	-	-	-	-	-1.0	
Ontario	11.3	10.3	9.3	9.5	9.3	9.2	-2.1		Alaska Total	17.1	12.9	11.4	10.6	9.8	9.9	-7.3	-42%
Orange Co.	8.5	8.5	8.4	8.2	8.3	8.6	0.1		Delta								
Seattle	7.4	7.6	7.4	7.2	7.3	7.2	-0.3		Salt Lake City	4.6	4.8	4.5	4.4	4.8	5.6	1.0	
Portland	5.5	5.7	5.5	5.4	5.5	5.6	0.1		Los Angeles	3.5	2.8	1.9	-	-	-	-3.5	
Phoenix	6.6	6.8	6.6	6.4	5.6	5.7	-0.9		Atlanta	1.0	-	-	-	-	-	-1.0	
Denver	4.9	4.7	4.7	4.2	3.8	3.9	-0.9		Delta Total	9.1	7.6	6.4	4.4	4.8	5.6	-3.6	-39%
Salt Lake City	4.7	4.7	4.6	4.5	3.9	3.8	-0.9		US Airways								
Chicago-MDW	4.8	4.9	4.9	4.1	2.9	3.0	-1.8		Phoenix	5.7	5.0	4.6	4.4	4.2	4.4	-1.3	
Albuquerque	2.7	2.8	2.7	2.8	2.5	2.5	-0.2		Las Vegas	1.0	0.7	0.5	-	-	-	-1.0	
Reno	3.7	3.7	3.6	3.5	3.6	3.1	-0.7		US Airways Total	6.7	5.6	5.1	4.4	4.2	4.4	-2.3	-34%
Houston-HOU	1.9	1.9	2.0	2.0	1.8	1.9	0.0		United								
Kansas City	1.8	1.9	1.9	1.8	1.1	1.5	-0.3		Denver	4.8	4.7	3.1	2.8	1.9	1.9	-2.9	
Boise	1.8	1.8	1.8	1.9	1.9	1.8	-0.1		Los Angeles	4.0	3.9	3.8	1.2	-	-	-4.0	
Austin	-	0.6	1.0	1.0	1.0	1.0	1.0		Washington D.C.-	0.1	-	-	-	-	-	-0.1	
Nashville	1.0	1.0	1.0	1.0	0.1	0.6	-0.4		Chicago-ORD	0.6	-	-	-	-	-	-0.6	
Spokane	2.0	2.0	2.0	2.0	1.5	1.0	-1.0		United Total	9.5	8.6	6.8	3.9	1.9	1.9	-7.6	-80%
Tucson	1.0	1.0	1.0	0.3	-	-	-1.0		Hawaiian								
Southwest Total	134.7	131.6	126.1	121.5	111.5	112.4	-22.3	-17%	Honolulu	-	0.7	1.0	1.0	1.0	1.0	1.0	NA
JetBlue									American								
New York-JFK	2.8	3.4	3.6	3.0	2.9	3.0	0.2		Dallas/Ft. Worth	3.0	2.9	2.0	-	-	-	-3.0	-100%
Long Beach	4.5	5.0	4.8	3.5	3.0	3.0	-1.5		Continental								
Wash D.C	2.0	2.6	2.6	1.9	1.1	1.6	-0.4		Houston-IAH	2.8	3.0	2.1	-	-	-	-2.8	-100%
Boston	1.0	1.5	1.9	1.3	1.0	1.2	0.2		Aloha								
Ft. Lauderdale	0.1	-	-	-	-	-	-0.1		Honolulu	1.0	0.1	-	-	-	-	-1.0	
Jet Blue Total	10.5	12.5	13.0	9.6	8.0	8.7	-1.7	-16%	Kona	0.2	0.1	-	-	-	-	-0.2	
ATA									Las Vegas	1.0	0.1	-	-	-	-	-1.0	
Honolulu	1.9	0.3	-	-	-	-	-1.9		Kahului	1.0	0.1	-	-	-	-	-1.0	
Kahului	1.1	0.1	-	-	-	-	-1.1		Aloha Total	3.2	0.5	-	-	-	-	-3.2	-100%
Hilo	0.7	0.1	-	-	-	-	-0.7		LEGACY TOTAL								
Kona	0.6	0.1	-	-	-	-	-0.6		51.5	41.9	34.8	24.3	21.8	22.7	-28.8	-56%	
Chicago-MDW	0.7	0.1	-	-	-	-	-0.7		Mexicana								
Lihue	0.5	0.1	-	-	-	-	-0.5		Guadalajara	1.5	1.6	1.5	1.0	0.8	0.8	-0.7	
ATA Total	5.4	0.9	-	-	-	-	-5.4	--100%	Guanjauto	0.3	0.3	0.2	0.1	0.0	0.3	0.0	
LCC TOTAL									Zacatecas	0.3	0.3	0.2	0.1	0.0	0.3	0.0	
150.5	145.0	139.1	131.1	119.5	121.1	-29.4	-20%	Mexicana Total	2.1	2.1	1.8	1.2	0.9	1.4	-0.7	-33%	
									Taca								
									San Salvador	0.4	0.4	0.6	-	-	-	-0.4	-100%
TOT ALL CARRIERS									INTL TOTAL								
204.6	189.4	176.4	156.6	142.3	145.3	-59.3	-29%	2.5	2.6	2.5	1.2	0.9	1.4	-1.1	-44%		

Source: Official Airline Guide

Notes: Skybus and Allegiant did not report to the Official Airline Guide and are not included in the table. Skybus ceased operations in April 2008. Allegiant began twice weekly service to Bellingham, WA in February 2009. This service is expected to reach 5 weekly flights in June 2009.

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As shown in the table, average daily departures declined from 205 in the first quarter of 2008 to 142 in the first quarter of 2009, rebounding to 145 in the second quarter of 2009, accounting for an overall decline of 29% in the five quarters. Other than Hawaiian, who began service in May 2008, all other carriers, both low cost carriers and legacy carriers pulled flights at OAK. Legacy carriers experienced the largest decline, down 56% from 52 daily departures to 23 daily departures. The level of service by low cost carriers (LCCs), also fell, albeit at lower levels than the legacy carriers. The following declines should be noted between January 2008 and June 2009 (as reported to the *Official Airline Guide*):

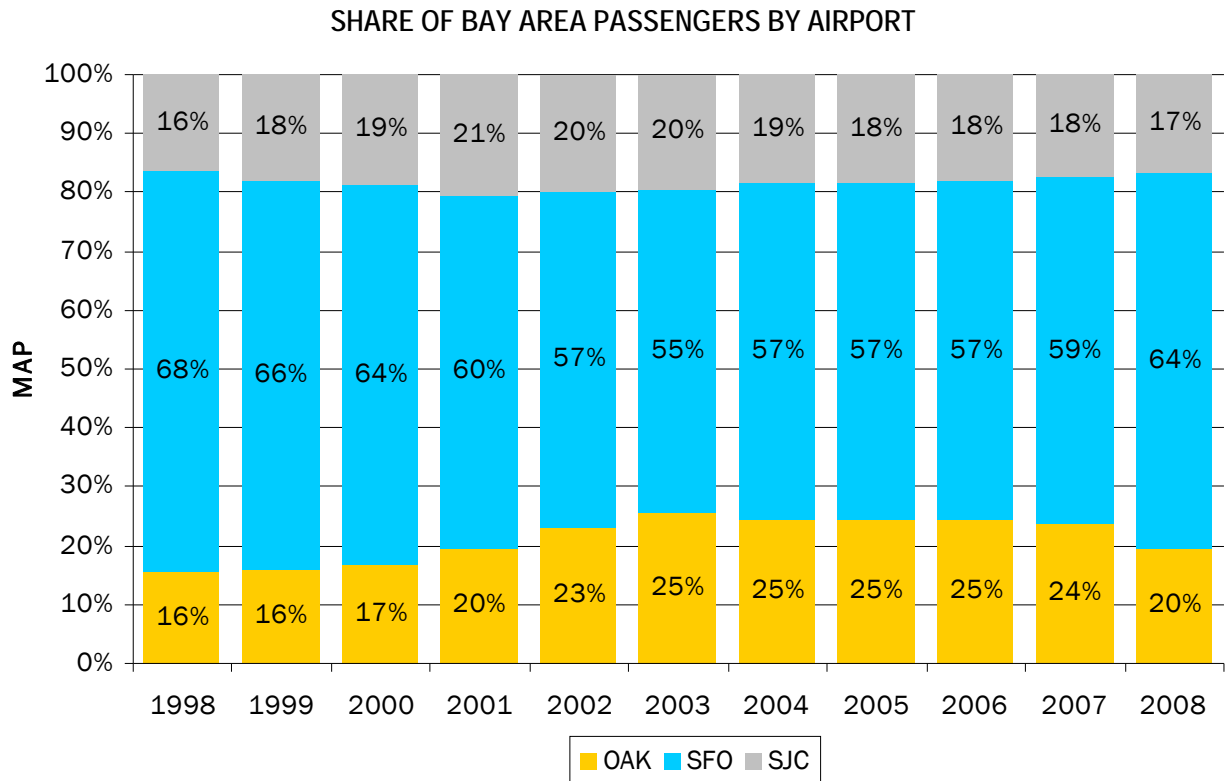
- ATA, Aloha, and Skybus (not included in table above) each ceased operations at OAK in April 2008. These three carriers offered a total of 10 average daily departures in the first quarter of 2008.
- Continental, American, and Taca pulled all service at OAK in September 2008. These carriers accounted for 6 average daily departures in the second quarter of 2008.
- The number of nonstop destination airports from OAK declined from 41 to 29. Dallas/Ft. Worth, Houston-Bush, Chicago-O'Hare, Atlanta, Kahului, Tucson, and San Salvador are a few of the notable losses. Other airports with at least 40% fewer departures in the first quarter of 2008 compared to the second quarter of 2009 include: Los Angeles (LAX), Honolulu, Denver, Spokane, Chicago-Midway, and Guadalajara. This is due to a combination of legacy carriers pulling routes and Southwest shifting some service to San Francisco.
- The number of average daily departures offered by United Airlines was down 80% during the period. In the first quarter of 2008, United offered 10 daily departures to four destinations. By the second quarter of 2009, United had just two daily flights to Denver.
- Delta and US Airways serve just one destination in the second quarter of 2009 and Alaska (including regional partners) serves only its larger hubs in Portland and Seattle.
- Even Southwest operated 22 fewer daily departures in the second quarter of 2009 compared to the first quarter of 2008. Southwest dropped at least one daily departure to 13 of its 21 destinations served.

It is important to note that two new carriers, Hawaiian and Allegiant, have started service at OAK in the last year. Hawaiian began nonstop daily service to Honolulu in May 2008. Allegiant initiated service to Bellingham, Washington in February 2009 with twice weekly service. The service will expand to five times per week in June 2009. This new service, however, has done little to offset such substantial losses.

Bay Area Comparison

Shifting Market Share in the Bay Area

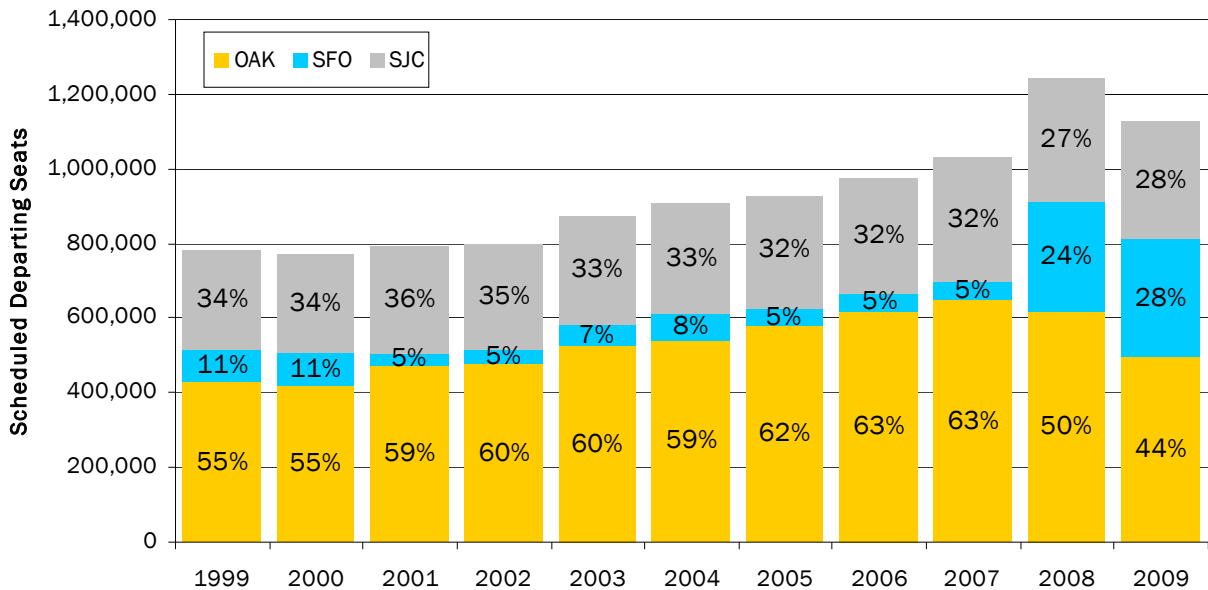
OAK's recent downturn in service and passengers points to how the Bay Area's commercial service airports share market area passengers and how changes in service at one airport can impact the other two Bay Area airports. The graph below shows how OAK gained market share of Bay Area passengers between 2000 and 2006. In 2008, OAK's share of regional passengers was just 20%, down from 25% two years earlier.



Source: Airport management records

Southwest pulled out of SFO in March 2001 citing airport congestion and limited room for expansion. The carrier subsequently expanded service at OAK. Overall airfares at SFO rose following Southwest's departure while the fares at OAK dropped. In the early 2000s, Bay Area travelers chose to fly out of OAK more frequently due to the lower fares and increased service offered. However, when Southwest reentered the SFO market in late 2007 along with the entrance of other LCC carriers Virgin America and JetBlue, there was an influx of 20% of additional LCC seats into the Bay Area (see graph below.) All of these seats were added at SFO, while OAK and SJC actually saw declines in LCC capacity. In April 2009, OAK accounted for just 44% of the LCC departing seats in the Bay Area, down from 63% two years earlier.

**TOTAL LCC MONTHLY DEPARTING SEATS AND SHARE OF SEATS BY AIRPORT
(For the month of April)**



Source: *Official Airline Guide*

Note: The following carriers' data is included in this graph: Southwest, JetBlue, Virgin America, Frontier, Air Tran, Spirit, ATA, and Independence Air

It is worth noting that as carriers (especially LCCs) continue to make service changes at Bay Area airports, shifts in market share are expected to continue. Both SFO and OAK are expecting to experience capacity constraints in the next 20 years, allowing limited room for expansion by any carrier in the longer term.

Recent Bay Area Trends

According to the *Official Airline Guide*, when compared to other large airports in the U.S., OAK experienced the largest decline in year-over-year scheduled seat capacity in April 2009, down 26%. Needless to say, OAK has experienced the largest capacity cuts over the last three years when compared to the other Bay Area airports as well. The changes in scheduled seat capacity at OAK, SFO, and SJC between 2006 and 2009 are presented in the following table.

**CHANGES IN BAY AREA SCHEDULED DEPARTING SEATS
For the Month of April**

	OAK	SFO	SJC	Total
Scheduled Departing Seats				
2006	824,508	1,724,033	619,456	3,167,997
2007	852,778	1,734,508	622,908	3,210,194
2008	776,860	1,949,776	594,576	3,321,212
2009	576,618	1,852,771	522,039	2,951,428
% Change				
2006-07	3.4%	0.6%	0.6%	1.3%
2007-08	-8.9%	12.4%	-4.5%	3.5%
2008-09	-25.8%	-5.0%	-12.2%	-11.1%
2007-09	-32.4%	6.8%	-16.2%	-8.1%
% of Bay Area Total				
2006	26.0%	54.4%	19.6%	
2007	26.6%	54.0%	19.4%	
2008	23.4%	58.7%	17.9%	
2009	19.5%	62.8%	17.7%	

Sources: *Official Airline Guide*, Allegiant Airlines
Note: Includes international departing seats.

Nearly one-third of the seats at OAK were cut between April 2007 and the same month of 2009. SJC has experienced a 16% decline during the period, which mirrored the U.S. overall trend.

SFO, on the other hand, realized an increase in seat capacity, up 6.8% between 2007 and 2009. It is important to point out that SFO's growth occurred between 2007 and 2008, as LCCs Virgin America, Southwest, and Jet Blue expanded in the market. Jet Blue entered the SFO market in May 2007 and Virgin America and Southwest entered the SFO market in August 2007. In March 2009, Southwest offered 40 departing flights per day, while Virgin America offered 29 daily departures and Jet Blue offered 5 per day. According to SFO airport management, Southwest has plans to add another 10 -20 daily flight departures by 2011. The ability of start-up carrier Virgin America to withstand the current economic downturn, competitive pressure, and low yields is uncertain.

Although Southwest have had a big push of service in recent years at SFO, they have reassured OAK airport management of their continued commitment to serving OAK.

According to the US DOT, *O&D Survey*, airfares in several of the new nonstop markets served by the LCCs from SFO have dropped dramatically, including Denver, LAX, Phoenix, Austin, and Salt Lake City. Several

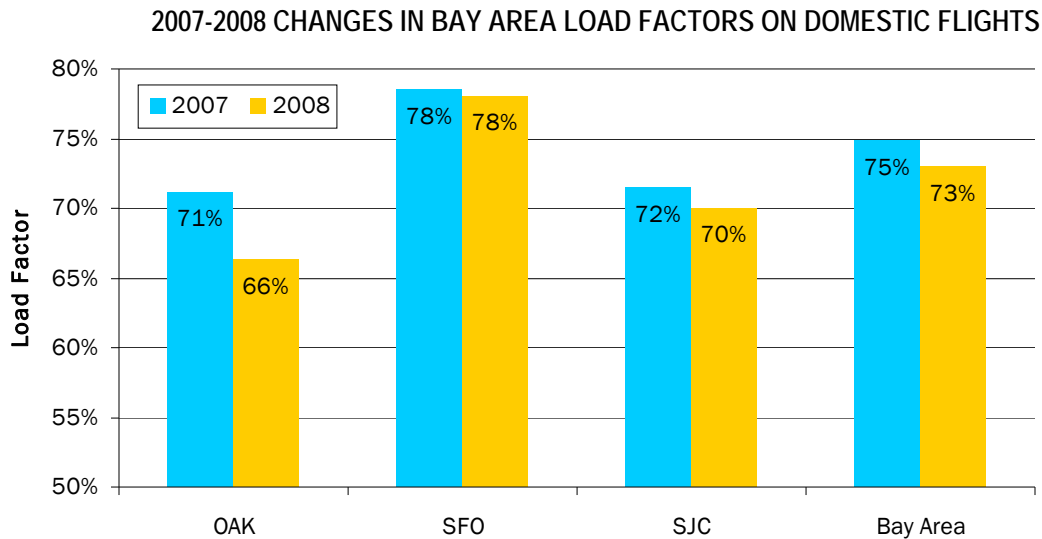
carriers including Virgin America, however, have filed for confidentiality and their data is not included in the US DOT data. Therefore the fares could be lower in other markets as well. The fares at OAK have not increased drastically over the last two years, up only 6% (from an average of \$119 to \$126) between 3rd quarter 2007 and the same period of 2008, the most recent data available at the writing of this analysis.

Capacity at SFO was reduced 5% between April 2008 and April 2009 as capacity provided by the legacy carriers is scaled down during the economic downturn, including large cuts by United. SFO airport management estimates that passenger levels will also decline 5 to 7% in 2009 from 2008 levels.

As shown, OAK has been the target of the majority of Bay Area service cuts over the last two years when compared to SJC and SFO. In 2006 OAK accounted for 26% of Bay Area departing seats. By April 2009, OAK will have dropped to below 20% of the total. SFO experienced all of the growth, as its share of Bay Area seats increased from 54% to 63%.

Bay Area Load Factors

The load factors at OAK dropped five percentage points between 2007 and 2008. The table below graphically depicts the change in load factors on domestic flights at each Bay Area airport, as well as all Bay Area airports combined. Flights departing OAK also have the lowest overall domestic load factor (66%) in 2008 when compared to SFO and SJC and are seven percentage points lower than the Bay Area average.



Source: US DOT, Schedule T-100

Note: Percentages are rounded, 2008 data is for 11 months through November.

The load factor in 2008 on all Southwest flights from OAK averaged 63%. Several Southwest routes actually averaged below 60% loads in 2008 including Seattle, Salt Lake City, Boise, Los Angeles, and Reno. When Southwest flights from OAK are removed from the airport’s total load factor, the average annual load factor was 73% in 2008. It is important to note that the loads on Southwest flights from SFO were also lower than their average in 2008 at 62%. Flights from Los Angeles, Denver, and Phoenix on Southwest from SFO all were less than 60% full on average in 2008.

The Air Transport Association (ATA) noted that the 2007 break-even load factors for U.S. passenger airlines was 78%. For the 1st quarter of 2008, the most recent data available, the break-even load factor was even higher at 83%. In addition, airline domestic yields at all Bay Area airports are actually lower than they were in 2000, which points to less profit for the carriers over the last eight years. The OAK load factors are well below the carriers' break-even load factors. OAK's load factors are worrisome as carriers may look further to cut capacity in the Bay Area and specifically at OAK. Although Southwest operates at a lower break-even load factor than many of the legacy carriers due to a lower cost structure and fuel hedging, it would appear that there may be excess capacity to several destinations from Bay Area airports, considering the weakening demand for air travel in 2009.

2009 OAK MAP Estimates and Projections of Demand

Due to the uncertainty in airline travel in 2009 and into the future, three forecast scenarios for OAK MAP have been developed for this review - low, baseline, and high. The 2009 OAK MAP figures are estimates based on the assumptions outlined below. The 2010 to 2030 are projections using various growth rates. A baseline estimate of 2009 MAP for SFO and SJC have also been developed for the purpose of this review. Low and high growth estimates of 2009 MAP have not been determined for SFO and SJC.

Baseline Estimate of 2009 MAP

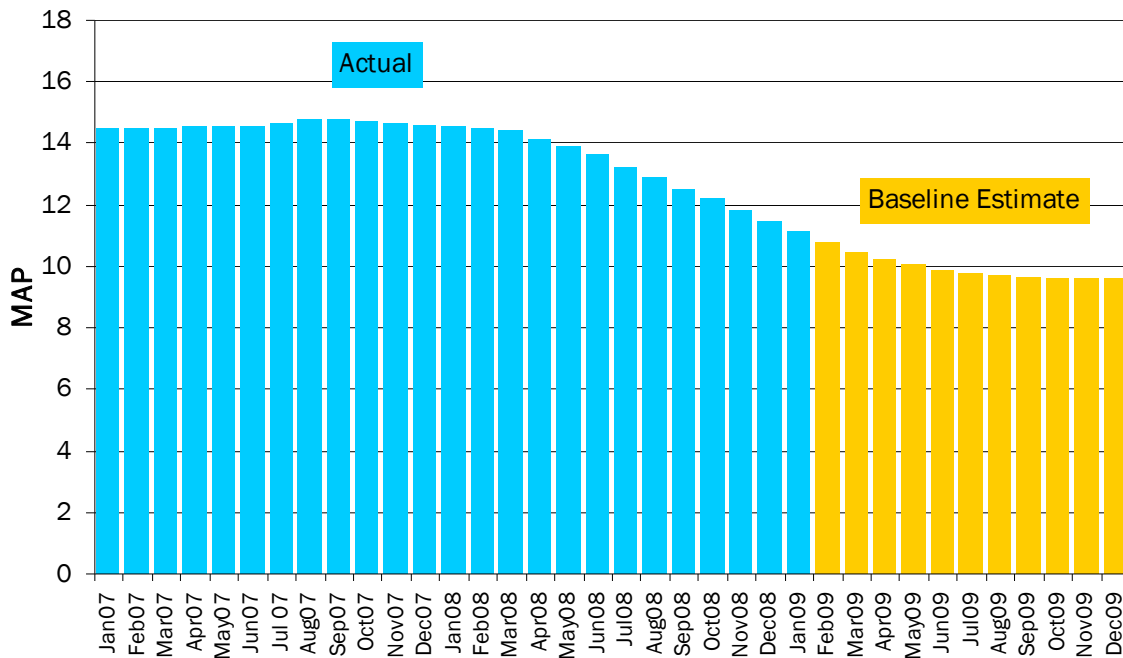
The following were considered in the development of 2009 MAP baseline estimate for OAK:

- The economic downturn will continue and demand will not return to previous levels in 2009.
- No major changes in capacity at OAK will occur. Most of the airline seat capacity declines were absorbed by OAK in 2008. No carriers will add substantial levels of capacity in 2009. Southwest will not cut any additional capacity, based on their recent show of commitment by re-establishing flights to Albuquerque, Kansas City, and Nashville.
- 2009 scheduled seat capacity was annualized based on the first 6 months of schedule data reported by the *Official Airline Guide*. The percent of actual seats compared to scheduled departing and arriving seats will remain the same in 2009 as in 2008¹.
- The 2009 load factor at OAK will decline slightly to 65% (down from 66% in 2008). This is based on industry indicators of weaker demand in 2009.

Based on WSA analysis of seat capacity and load factors, we believe that there will be 9.6 MAP in calendar year 2009. The graph below depicts the annualized change in MAP by month since January 2007.

¹ The number of actual seats is often less than the number of scheduled seats due to flight cancellations schedule changes and equipment changes.

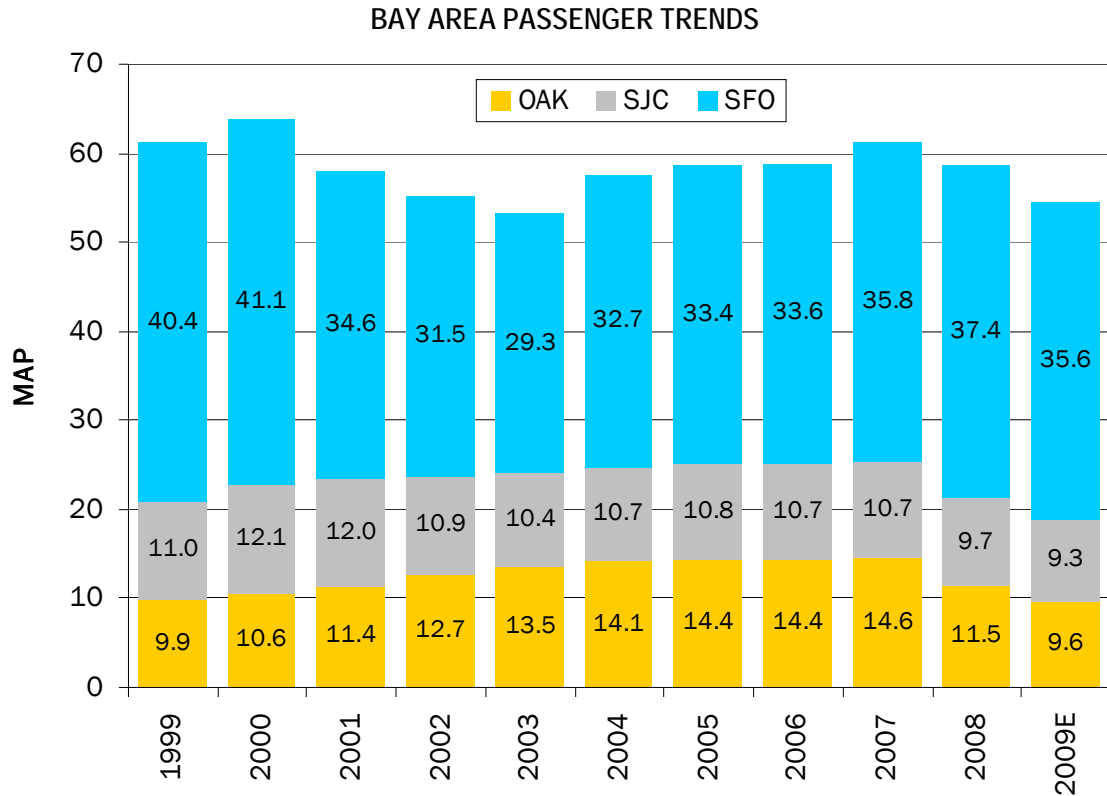
**RUNNING 12 MONTH TOTAL MAP
2007 & 2008 ACTUAL and 2009 BASELINE ESTIMATE
OAKLAND INTERNATIONAL AIRPORT**



Source: Oakland International Airport, Wilbur Smith Associates

The graph below presents the change in MAP at each of the Bay Area airports over the last 10 years. The 2009 estimated MAP for SFO was based on airport management estimates that there would be 5% fewer passengers in 2009. The estimate for SJC is based on the same methodology as described above for OAK.

Total MAP at all airports reached just over 61 million in 1999. After several years of decline following 9/11, Bay Area MAP reached 61 million once again in 2007. SFO was the hardest hit following 9/11, while OAK actually experienced growth as Southwest expanded in the market. It is estimated that there will be 54.5 MAP at all Bay Area airports combined in 2009, 6.6 million (11%) fewer passenger than just two years before. Although OAK accounted for the largest declines since 2007, when the 10-year trend is analyzed, OAK accounted for the smallest decline and has returned passenger levels to nearly the same as 1999.



Source: Airport Management records, Wilbur Smith Associates

Low Estimate of 2009 MAP

In order to determine the low estimate of 2009 MAP the following assumptions were considered:

- The economic downturn will continue through 2009. The demand for air travel in the US and at OAK, especially in the summer months, will weaken significantly.
- Based on in depth analysis of Bay Area trends of capacity and load factors by route and carrier, it seems that current levels of capacity in the Bay Area cannot be sustained based on deteriorating demand. There appears to be justification for capacity reductions in several markets such as Los Angeles, Burbank, Seattle, Denver, and Salt Lake City. While carriers (namely Southwest and Virgin America) have added substantial levels of service to these and other markets in recent years at SFO, carriers have reduced flights and capacity on many of the routes from OAK and SJC. Capacity cuts may be warranted at SFO; however, it is unclear what strategic capacity-related decisions will be made by the airlines for the Bay Area. For the low estimate of 2009 OAK MAP, it is assumed that OAK will receive additional flight cuts as the competition between airlines at SFO continues.
- The percent of actual seats compared to scheduled departing and arriving seats will remain the same in 2009 as in 2008. For this estimate, actual seat capacity is estimated to be 13 million arriving and departing seats in 2009.
- Based on the capacity cuts, the 2009 load factor is estimated to be 70%, up from 66% in 2008.

Based on these assumptions, the low estimate is 8.8 MAP at OAK in 2009.

High Estimate of 2009 MAP

OAK management estimates that there will be 10.2 MAP in fiscal year 2009 (July 2008-June 2009). The high 2009 estimate of OAK MAP has adopted OAK management's estimate of 10.2 MAP for calendar year 2009.

2010-2030 MAP Projections

OAK is an important and necessary aviation resource in the Bay Area. The airport will continue to play an integral role in supporting aviation needs in the region. The low, baseline and high forecasts of OAK MAP presented below are for the purpose of this review only. It represents estimates of change in passengers at OAK through 2030 based on historic and current trends discussed above and discussions with OAK airport management. This table also compares the projections developed in the prior forecast review and the OAK Master Plan developed in 2004.

COMPARISON OF OAK MAP PROJECTIONS

Year	2004 OAK Master Plan MAP	6/08 OAK Projected MAP	2/09 OAK Projected MAP		
			Low	Baseline	High
2008	16.4	13	11.5	11.5 A	11.5
2009	17	13	8.8E	9.6E	10.2E
Forecasts					
2010			8.8	9.8	10.2
2011			9.1	10.1	10.4
2012	20	14	9.3	10.3	10.7
2013			9.6	10.6	10.9
2014			9.9	10.9	11.3
2015			10.2	11.3	11.7
2020	26	17	11.8	13.1	13.9
2025	30	20	13.7	15.4	16.9
2030	NA	24	15.9	18.2	20.6

Sources: 2004 OAK Master Plan, OAK airport management, Wilbur Smith Associates
 Notes: A=actual, E=estimate

OAK airport management estimates that passenger levels will bottom out at 10.2 MAP in fiscal year 2009, remain constant in 2010, and grow at 2.4% per year through fiscal year 2013, reaching 10.9 MAP in fiscal year 2013. Our projections took this forecast into account.

Each projection also assumes a return to national GDP growth starting 2011. It is assumed that MAP at OAK will return to growth as well in the next two years, albeit at much lower levels than previously projected.

Baseline Forecast: Based on the assumptions noted above, we estimate a calendar year 2009 MAP of 9.6 million. We then applied the airport management's 2.4% annual growth rate through 2012. MAP are

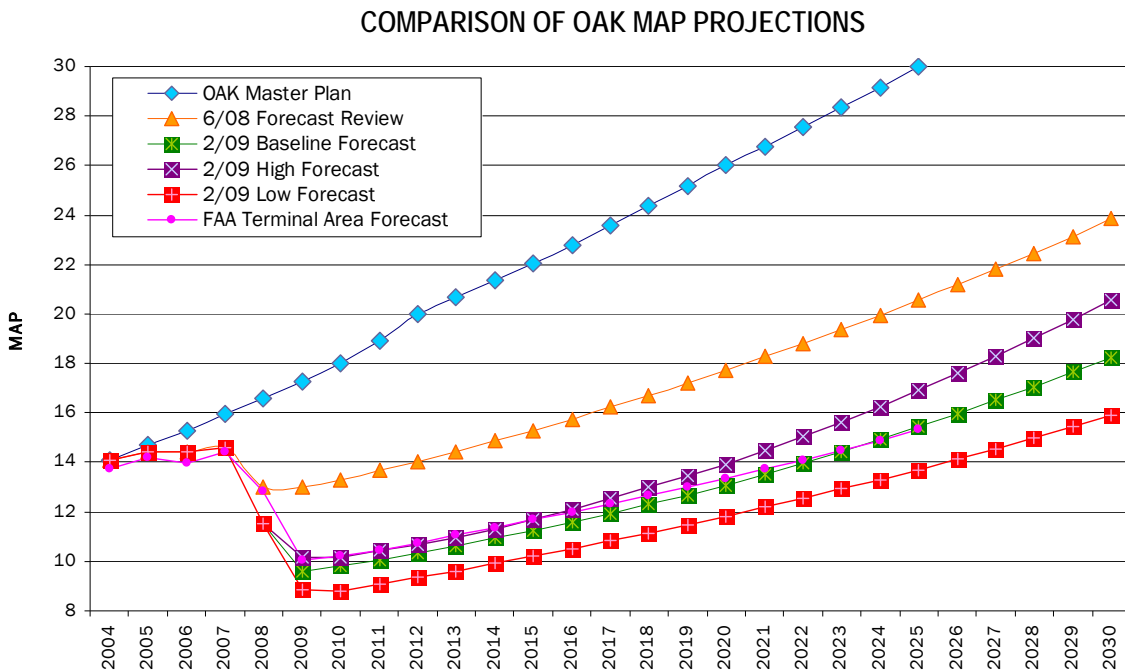
projected to grow at 3.0% between 2013 and 2020 and grow at 3.4% through the 2030 forecast period. This represents an average annual growth rate of 3.1% between 2009 and 2030.

Low Forecast: 8.8 MAP was developed as the low estimate in 2009. Passengers are projected to remain at 8.8 MAP in 2010 and grow at 3.0% through the remainder of the forecast period to reach 15.9 MAP in 2030. The average annual growth from 2009 to 2030 for the low projection is 2.8%.

High Forecast: This forecast averages 3.4% per year over between 2009 and 2030. The high forecast uses the 2009 estimate and near term projection developed by OAK management. MAP will grow at 2.4% through 2013 and then experience annual growth of 3.5% through 2020 and 4.0% between 2020 and 2030. Using this approach, OAK will reach 20.6 MAP by 2030.

Comparison to Other Forecasts

The comparison of projections is graphically depicted below. 2008 FAA projections have been added for comparison purposes. Annually the FAA projects passengers and operations for individual airports as part of their *Terminal Area Forecasts*. The most recent FAA projections were published in December 2008 and forecasts passengers through 2025. The FAA forecasts mirror the projections developed for this review. The FAA projects 2025 OAK MAP to reach 15.3 million, just 100,000 less than our 2025 baseline projection. The FAA's 2009 to 2025 average annual growth rate for OAK MAP is 2.7%.



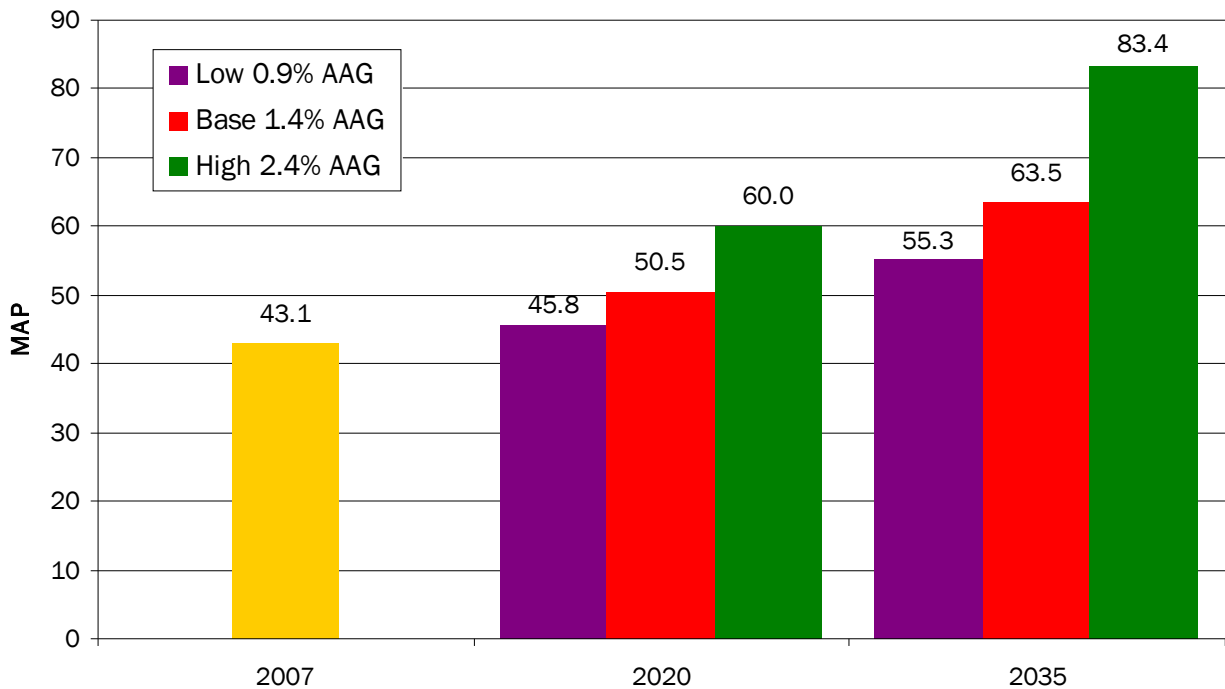
Sources: 2004 OAK Master Plan, OAK airport management, Wilbur Smith Associates. FAA Terminal Area Forecasts

The projections assume no large scale improvements in service at OAK, especially in the near term. If, however, Southwest scales back operations at SFO and brings back a large number of flights to OAK as demand improves or another LCC such as Allegiant decides to operate a new base at OAK, the airport could see higher rates of growth than noted in the projections. For reference, in order achieve another one

million MAP, Southwest or another LCC with similar fleet would need to offer an additional 12 to 15 daily departures.

An update of the 2000 Bay Area Regional Airport System Plan (RASP) long term projections is currently being prepared for the Bay Area Regional Airport Planning Committee (RAPC). To date, projections of domestic O&D, international O&D, and connecting passengers for all Bay Area airports have been developed for 2020 and 2035. A breakout of forecasted passengers by airport is not yet available. The table below presents the domestic O&D passenger projections for all Bay Area airports combined. These projections were developed based on assumptions of regional personal income, the price of oil, airline yields, and post-9/11 structural changes. Similar to our methodology, three scenarios were developed: Low, Base, and High forecast scenarios. The year 2007 was used as a base for the RASP projections.

RASP PROJECTIONS OF BAY AREA DOMESTIC O&D PASSENGERS



Sources: SH&E, Regional Airports Planning Committee

In 2007, OAK accounted for 31.6% of the region's domestic O&D passengers (13.6 of the 43.1 MAP). OAK's 2008 market share is even lower at around 28%. If OAK's share remains constant through the 2020 forecast period, the airport would accommodate 14.1 MAP (domestic O&D only), about 1 MAP more than the Baseline projection developed for this analysis.

Summary

These projections have been developed during dangerously uncertain times in the airline industry. As shown, we were unable to accurately determine how low passenger and service levels would actually fall when the review was completed in 2008. There is still a great deal of uncertainty as to where OAK MAP will actually bottom out. How the economic downturn will affect the airline industry and in turn, OAK, is for the most part unknown. All short term projections should continue to be monitored based on unanticipated

changes in the economy that affect the airline industry which experts note may change the entire commercial service landscape over the next few years.

Chapter 3

UPDATED RIDERSHIP FORECASTS

Introduction

As mentioned previously, the Bay Area Rapid Transit (BART) District is planning to implement an Automated Guideway Transit (AGT) connection to link the Oakland International Airport (OAK) with the Coliseum/Airport BART Station. This Oakland Airport Connector (OAC) AGT system would replace the existing connecting bus service (AirBART), which is operated by the airport. Chapter 2 provides an updated air travel forecast considering the current economic recession and the changes in the airline industry for use of the OAC system. This chapter provides the potential impact of the updated OAC ridership on the one-way fare of \$5.00 and \$6.00 trips.

AirBART Ridership

AirBART is operated currently with shuttle buses running at 10-minute headways during BART service hours. This section presents a snapshot of ridership performance for AirBART including mode share and year-to-date summary.

As shown in the table below, the AirBART riders comprise between 7 - 9% of the total OAK MAP for the years 2003 to 2008. It is interesting to note that the increase in AirBART ridership is directly related to the increase in OAK MAP. The average mode share for this six year period was 8.4%.

AirBART Mode Share

	2003	2004	2005	2006	2007	2008
OAK MAP	13,500,000	14,100,000	14,400,000	14,400,000	14,600,000	11,500,000
AirBART	1,032,000	1,123,000	1,230,000	1,300,000	1,294,000	969,000
Mode Share	7.6%	8.0%	8.5%	9.0%	8.9%	8.4%

Sources: BART, Wilbur Smith Associates, 2009

Similar to OAK air passenger traffic which declined by 21% between 2007 and 2008, AirBART ridership has also declined. The ridership for the year 2008 has decreased by 25 percent when compared to 2007 ridership. As explained in Chapter 2 earlier, various factors such as the current economic recession, and increased fuel prices have impacted the demand for air travel. However, these factors have actually had a greater impact on AirBART usage, because AirBART ridership is declining at a higher rate than the MAP. The table on the following page provides the ridership data for the years 2003 to 2008.

AirBART Ridership

	2003	2004	% Change	2005	% Change	2006	% Change	2007	% Change	2008	% Change
January	75,000	79,000	6.02%	89,000	12.11%	94,000	5.51%	94,000	0.36%	80,000	-15.06%
February	66,000	76,000	14.94%	86,000	12.77%	88,000	2.53%	90,000	2.09%	81,000	-10.37%
March	80,000	96,000	20.74%	108,000	11.84%	104,000	-3.61%	102,000	-1.82%	90,000	-11.56%
April	75,000	93,000	23.28%	95,000	2.51%	106,000	12.09%	105,000	-1.32%	86,000	-18.51%
May	83,000	94,000	13.40%	105,000	11.88%	112,000	6.35%	119,000	6.85%	83,000	-30.79%
June	87,000	100,000	14.93%	102,000	2.11%	116,000	14.53%	115,000	-1.21%	83,000	-28.02%
July	94,000	96,000	2.44%	105,000	8.53%	107,000	1.96%	118,000	10.91%	84,000	-28.81%
August	100,000	100,000	0.79%	111,000	10.65%	116,000	4.03%	125,000	8.48%	88,000	-29.60%
September	93,000	96,000	3.40%	109,000	12.73%	113,000	3.52%	110,000	-2.54%	75,000	-31.82%
October	94,000	98,000	4.03%	112,000	13.87%	118,000	5.32%	109,000	-7.57%	80,000	-26.61%
November	93,000	97,000	5.06%	107,000	10.38%	115,000	7.22%	109,000	-5.67%	68,000	-37.61%
December	92,000	98,000	6.48%	101,000	3.06%	111,000	9.50%	98,000	-11.23%	71,000	-27.55%
Yearly Totals	1,032,000	1,123,000	9.03%	1,230,000	9.27%	1,300,000	5.68%	1,294,000	-0.32%	969,000	-25.12%

Source: BART, Wilbur Smith Associates, 2009

The decline in the air passenger activity has resulted in a related decline in parking demand. As a result of this decline the airport has closed the remote economy lot and converted long term parking lot B to economy parking. This has effectively lowered the cost of the parking for many long term parkers who can now park close to the airport and still pay the economy parking fee which is currently \$16.00. This may be one reason why AirBART's mode share has declined.

Revised Daily Patronage Forecasts

The revised forecasts were developed using several assumptions:

- It was estimated that the AirBART mode share will decline further to 8.0% in the year 2009 and that it will remain at that level through the 2012
- The start up of the AGT service would occur in the year 2013.
- There will be a three year period from the time the AGT service starts until the full increase in mode share expected is realized.
- One-way fares of \$5.00 and \$6.00 were tested as compared with the current \$3.00 fare and the \$2.00 which was in place when the original forecasts were developed. It was assumed that the fare increase would occur in the year 2013, concurrent with the start up of the AGT service.
- The sensitivities of the forecasts to changes in MAP, fares and parking fee are the same as those developed as part of the original forecasting efforts in 2007.

The revised ridership forecasts were developed for three scenarios as follows:

1. **AGT Low:**
 - a. Year 2030 MAP = 15.9
 - b. Average Long Term Economy Parking = \$12.00 per day
2. **AGT medium**
 - a. Year 2030 MAP = 18.2
 - b. Average Long Term Economy Parking = \$16.00 per day (current price)
3. **AGT High**
 - a. Year 2030 MAP = 20.6
 - b. Average Long Term Economy Parking = \$20.00 per day

The results of the forecasting effort are presented in the table on the following page. The table shows the results for each of the three scenarios for both a \$5.00 and \$6.00 estimated fare. The original ridership modeling, which was done when the fare for the AirBART bus service was \$2.00, indicated that increasing the fare from \$2.00 to \$5.00 would result in a 16 percent reduction in ridership, or that a 150 percent increase in the fare would result in only a 16 percent reduction in ridership. The estimation provided below indicates that raising the proposed fare for the OAC system to \$6.00 is expected to reduce the ridership by 3 percent as compared with a \$5.00 fare for the Year 2030. If parking fees were reduced to \$12.00 per day for economy parking as in AGT Low, a 3.4% decrease in ridership could be expected. If the fees were increased to \$20.00 per day, a 1.6 percent increase in ridership is forecast.

REVISED DAILY PATRONAGE FORECASTS BY YEAR AND MAP											
Period	MAP	No-Build AirBART Bus		OAC AGT Low		OAC AGT Medium			OAC AGT High		
			Mode Share	\$5.00 Fare ¹	\$6.00 Fare ¹	MAP	\$5.00 Fare ¹	\$6.00 Fare ¹	MAP	\$5.00 Fare ¹	\$6.00 Fare ¹
2003	13.5	2,830	7.7%	2,830	2,830	13.5	2,830	2,830	13.5	2,830	2,830
2004	14.1	3,080	8.0%	3,080	3,080	14.1	3,080	3,080	14.1	3,080	3,080
2005	14.4	3,370	8.5%	3,370	3,370	14.4	3,370	3,370	14.4	3,370	3,370
2006	14.4	3,560	9.0%	3,560	3,560	14.4	3,560	3,560	14.4	3,560	3,560
2007	14.6	3,550	8.9%	3,550	3,550	14.6	3,550	3,550	14.6	3,550	3,550
2008	11.5	2,650	8.4%	2,650	2,650	11.5	2,650	2,650	11.5	2,650	2,650
2009	8.8	1,930	8.0%	1,930	1,930	9.6	2,150	2,150	10.2	2,350	2,350
2010	8.8	1,930	8.0%	1,930	1,930	10.1	2,260	2,260	10.2	2,350	2,350
2011	9.1	2,000	8.0%	2,000	2,000	10.2	2,280	2,280	10.4	2,400	2,400
2012	9.3	2,040	8.0%	2,040	2,040	10.3	2,300	2,300	10.7	2,470	2,470
2013	9.6	2,100	8.0%	2,430	2,350	10.6	2,790	2,700	10.9	2,910	2,820
2014	9.9	2,170	8.0%	2,900	2,810	10.9	3,310	3,210	11.3	3,480	3,380
2015	10.2	2,240	8.0%	3,360	3,260	11.3	3,840	3,720	11.7	4,060	3,940
2016	10.5	2,310	8.0%	3,460	3,360	11.6	3,960	3,840	12.1	4,200	4,070
2017	10.8	2,380	8.0%	3,560	3,450	11.9	4,080	3,960	12.6	4,370	4,240
2018	11.1	2,450	8.0%	3,670	3,560	12.3	4,200	4,070	13.1	4,540	4,400
2019	11.5	2,520	8.0%	3,780	3,670	12.7	4,330	4,200	13.6	4,710	4,570
2020	11.8	2,600	8.0%	3,890	3,770	13.1	4,480	4,350	13.9	4,810	4,670
2021	12.2	2,680	8.0%	4,010	3,890	13.6	4,640	4,500	14.5	5,020	4,870
2022	12.5	2,760	8.0%	4,130	4,010	14.0	4,800	4,660	15.1	5,230	5,070
2023	12.9	2,840	8.0%	4,250	4,120	14.5	4,970	4,820	15.8	5,470	5,310
2024	13.3	2,930	8.0%	4,380	4,250	15.0	5,140	4,990	16.5	5,710	5,540
2025	13.7	3,020	8.0%	4,510	4,370	15.4	5,270	5,110	16.9	5,850	5,670
2026	14.1	3,110	8.0%	4,650	4,510	16.0	5,460	5,300	17.6	6,090	5,910
2027	14.5	3,200	8.0%	4,790	4,650	16.5	5,660	5,490	18.4	6,370	6,180
2028	15.0	3,300	8.0%	4,930	4,780	17.1	5,860	5,680	19.2	6,650	6,450
2029	15.4	3,400	8.0%	5,080	4,930	17.7	6,070	5,890	20.0	6,930	6,720
2030	15.9	3,500	8.0%	5,230	5,070	18.2	6,230	6,040	20.6	7,140	6,930

¹ - starting in the year 2013 when AGT service begins.
 Wilbur Smith Associates - March 4, 2009
 Preliminary- for discussion purposes only

Additional Considerations

In addition to the recent volatility of the national and global economic markets and the local Bay Area shifts air travel activity away from OAK to SFO and SJC, several other factors are emerging that could impact the volume of air passenger activity at OAK in the upcoming years. These include:

- The potential impacts of the planned California High Speed Rail System on air travel.
- The long-term effects of higher fuel costs on the aviation industry
- The effect that the increased emphasis on the reduction of green house gases and carbon footprints will have on air travel

California High Speed Rail

The recent passage of the proposition supporting the issuance of bonds to finance development of the California High Speed Rail System is a major step towards implementing the nation's first true high speed rail network. The voters approved \$9.0 billion in bonds which represents 27 percent of the estimated \$33.0 billion required to build the core of the system, which is the linkage between the Bay Area and Southern California via the Central Valley. As noted in the California High Speed Rail Authority's *2008 Business Plan*, the remaining funds have yet to be secured but it is hoped that federal, local, and private sector participation will cover the rest of the cost. The *Final Bay Area to Central Valley HST Final Program EIR/EIS* published by the CHSRA in May 2008 provides information on the potential impacts of high speed rail on air travel. It evaluates the potential reduction in air travel between the Bay Area and Southern California that would occur when the Phase 1 high speed rail network is completed. Table 1.2-2 on page 1-7 in the EIR/EIS provides information on the current and expected future levels of air passenger movement between these two areas of the state. It reports that in 2005 there were 2.7 million air passenger enplanements at OAK that were bound for Southern California. This represents about 37 percent of the total enplanements reported at OAK in that year. The EIR/EIS forecast a 68 percent growth in enplanements at OAK by the year 2020. In 2005 intercity air travel represented 3 percent of all intercity travel in California and 1.5 percent of all the travel between the Bay Area and Southern California, as well as the trips between these areas and the Central Valley (page 3.2-23 of the EIR/EIS). The ridership analysis forecast that by the year 2030 the high speed rail network would reduce air travel from all California airports by 43,865 passengers/day (page 3.3-13 of the EIR/EIS).

The Bay Area airports represent 48 percent of the air travel market that will be served by the high speed rail system, and OAK is currently serving 17.6 percent of the Bay Area market. As a result OAK's estimated share of the loss in air passengers due to high speed rail would be 3,700 passenger trips per day or about 1.4 million trips per year in the year 2030.

The range of the revised forecasts for OAK that were presented earlier in this chapter is from 15.9 to 20.6 million annual passengers in the year 2030. A variation of 1.4 million passengers due to high speed rail falls well within this range and represents about 7 to 9 percent of the forecast air passengers. This variation falls well within the range of the low to high forecast levels.

This calculation does not reflect that OAK is likely to be impacted less by high speed rail than either SFO or SJC, because there will not be a high speed rail station in the East Bay. East Bay travelers will still find OAK to be convenient in terms of access time as compared with traveling to San Francisco or San Jose to reach the high speed rail.

In May of 2007 BART had the firm of Fehr and Peers prepare a peer review of the ridership forecasting methodology. Fehr and Peers concluded that while the California High Speed Rail System could result in a reduction in air travel at OAK, it is not likely to have a major impact, as the constrained runway and terminal capacity are more important factors in terms of limited the growth of the airport.

Increasing Fuel Costs

Although fuel costs have declined dramatically since their dramatic rise in 2008, it is widely agreed that fuel costs will increase in the future. However, the reduced air travel forecasts presented in this report already take into account the impact of higher fuel costs. In addition the recently updated Regional Air Systems Plan forecasts for all airports in the state included a major effort to consider the implications of higher fuel costs. As noted in Chapter 2, the RASP forecasts are very similar in magnitude to those presented in this report.

Green House Gas Emissions

A major challenge to the aviation industry will be to address the fact that air travel is one of the least energy efficient travel modes, and it produces high levels of green house gas emissions. An environmentally cleaner option to air travel is high speed rail. The continuing advances in communication technology are also helping to provide alternatives for many short business oriented trips. However, for many trips, air travel is the only viable option, and that is not likely to change. In addition it is likely that the aviation industry will take measures to reduce its carbon footprint. In the short term operational changes such as the recent action taken by many airlines to reduce in flight speeds will help to reduce fuel consumption. In the long term more efficient, cleaner jet engines and aircraft will be developed. In addition, the FAA is years behind in efforts to upgrade air traffic control systems and to introduce new technologies in aircraft control and guidance which reduce in-flight and on the ground travel times. It is likely that there will be increased federal spending in this area. Again, the forecasts provided in this report already take into account the higher costs of operation that the airlines are likely to experience in the future.

Other Considerations

In 2007 OAK achieved its all time high volume of 14.6 MAP. This year, in 2009 the MAP is likely to drop below 10.0 MAP. The revised forecasts in this report are very conservative. They suggest that OAK will not regain the MAP level achieved in 2007 until the year 2020. They also provide a range of possible futures. For example, it could be that for the next few years the Low AGT forecast will be the experience. However, it is not hard to envision a period when the economy recovers and the air travel industry has become more efficient when there would be a boom in air travel again. This could easily push the forecast into the Medium or High AGT range. OAK has lost a lot of flights to SFO which has plentiful gate capacity, direct BART access, and improved performance due to the low volume of air traffic as compared to pre-9/11 conditions. As activity increases at SFO, the convenience of OAK will improve again in relative terms. These are cycles common to the Bay Area and national air travel industry. The use of these forecasts should take into account the fact that the long term trend of air passenger activity at any airport is not a straight line growth curve, but varies over time due to a multitude of factors.

Summary

103308

BART OAC RIDERSHIP UPDATE

WILBUR SMITH ASSOCIATES

The combination of the weak economy, high fuel prices, and general turmoil in the airline industry has resulted in a significant decline in air travel. The Oakland International Airport has been particularly hard hit by these circumstances. The MAP estimates are based on current travel patterns at OAK and are indicative of the changes that have already been observed since June, 2008. This further indicates that ongoing fluctuations in economic and airline industry trends play a vital role in dictating future air travel patterns. Therefore, it is appropriate to reduce the projections for OAK. The future MAP estimates seem inherently uncertain given the dramatic changes that have occurred in the short time of six months. It is also recommended that future updates of the MAP estimates be carried out periodically to address potential changes to air travel demand resulting from changes in economic conditions.