

# Regional Airport Planning Committee Meeting Notice

## COMMITTEE MEMBERS

### Chair:

Rich Garbarino, ABAG

### Vice Chair:

Dean Chu, MTC

### Members:

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Alice Fredericks, Marin County

Alice Lai-Bitker, BCDC

Jake Mackenzie, MTC

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Terry Barrie, Caltrans

Tom Bates, BCDC

Mark Luce, ABAG

Roger Dickinson, Sacramento County

Carl Miller, Monterey County

Leroy Ornellas, San Joaquin County

### Alternates:

G. Hardy Acree, Sacramento County

Richard Laiblin, San Joaquin County

Tom Greer, Monterey County

John Bergener, SFO

### Staff liaisons:

Lindy Lowe, BCDC

Joe LaClair, BCDC

Doug Kimsey, MTC

Maiisa Cravens, ABAG

9:30 A.M. – Noon  
Friday, November 20th, 2009  
MetroCenter Auditorium  
101 8<sup>th</sup> Street  
Oakland, CA 94607

## Tentative Agenda

1. Call to Order
2. Public Comment Period (*Each speaker is limited to three minutes*)

A maximum of 15 minutes is available for the public to address the Committee on any matter on which the Committee either has not held a public hearing or is not scheduled for a public hearing later in the meeting. Speakers will be heard in the order of sign-up, and each speaker is generally limited to a maximum of three minutes. It is strongly recommended that public comments be submitted in writing so they can be distributed to all Committee members for review. The Committee may provide more time to each speaker and can extend the public comment period beyond the normal 15-minute maximum if the Committee believes that it is necessary to allow a reasonable opportunity to hear from all members of the public who want to testify. No Committee action can be taken on any matter raised during the public comment period other than to schedule the matter for a future agenda or refer the matter to the staff for investigation unless the matter is scheduled for action by the Committee later in the meeting.

3. Approval of Minutes of October 23<sup>rd</sup> Meeting
4. Regional Airport System Planning Analysis

**a. Air Traffic Redistribution Scenario.** David Hollander of SH&E will present the analysis that they have done regarding air traffic redistribution at the Bay Area's airports and provide the Committee with an understanding of the potential shift in traffic from SFO to

OAK and SJC due to the high levels of congestion occurring at SFO in 2035 under the Baseline Forecasts. (RAPC Staff, David Hollander)

**b. Potential Passenger Recapture by External Airports** The consulting team will make a presentation on opportunities for Stockton Metropolitan Airport, Monterey Peninsula Airport and Sacramento International Airport to serve the passengers in each of the catchment areas to relieve future demand at SFO, OAK or SJC. (David Hollander)

**c. Demand Management Scenario**

David Hollander of SH&E will present the strategies that will be analyzed to reduce congestion and improve efficiency of operations at the Bay Area airports based on projected runway conditions in 2035. (David Hollander)

**d. Air Traffic Control Technology Scenario** The consulting team will make a presentation on new Air Traffic Control/Air Traffic Management technologies that could be available in 2020 and 2035 to increase airfield capacity at the region's airports (David Hollander and Geoff Gosling)

**8. Update**

**9. New Business**

**10. Old Business**

**11. Adjournment**

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All items on the agenda are subject to action by the Committee. Actions suggested by staff are subject to change by the Committee.

**Speaker Sign-Up and Time Limits.** The public is encouraged to comment on agenda items at Committee meetings by completing a request-to-speak card (available from staff) and passing it to the Committee secretary or chair. Public comment may be limited by any of the procedures set forth in Section 3.09 of MTC's Procedures Manual (Resolution No. 1058, Revised) if, in the chair's judgment, it is necessary to maintain the orderly flow of business.

**Access to Meetings.** Meeting facilities are accessible to persons with disabilities. If you require special assistance, please contact any staff member prior to the meeting. An interpreter for the deaf will also be made available upon request to the staff at least five days prior to the meeting.

**Bagley-Keene Open Meeting Act.** The Committee is governed by the Bagley-Keene Open Meeting Act which requires the Committee to: (1) publish an agenda at least ten days in advance of any meeting; (2) describe specifically in that agenda the items to be transacted or discussed; and (3) refuse to add an item subsequent to the published agenda. In addition to these general requirements, the Bagley-Keene Act includes other specific provisions about how meetings are to be announced and conducted.

**Record of Meeting.** RAPC meetings are tape-recorded. Copies of recordings are available at nominal charge, or recordings may be listened to at MTC offices by appointment. Audio casts are maintained on MTC's Web site for public review for at least one month.



# ALTERNATIVE STRATEGIES FOR ACCOMMODATING THE BAY AREA'S FUTURE AVIATION DEMAND

## *Traffic Redistribution Scenario*

*Prepared for:*

**Regional Airport Planning Committee**



**DRAFT**

November 20, 2009

Passion. Expertise. Results.

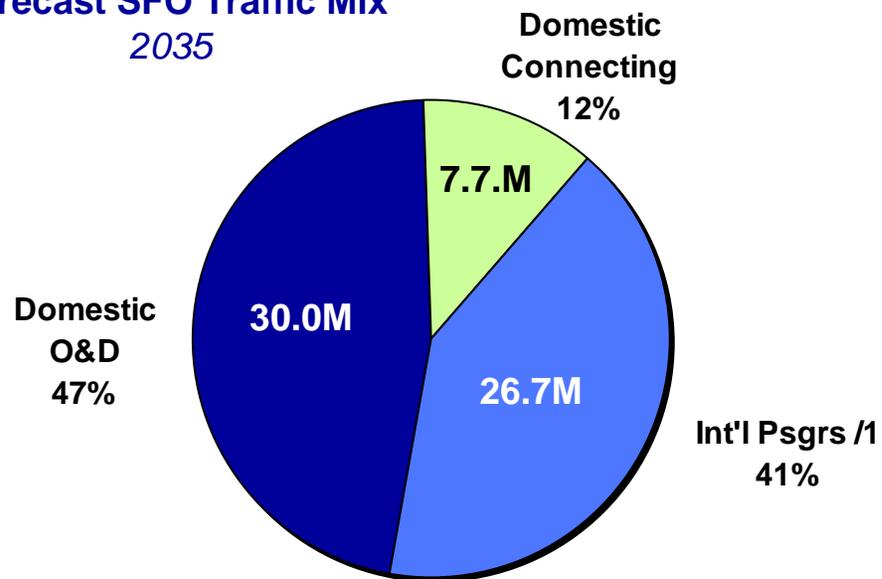
# Critical Study Questions

- ◆ **What Are the Capacity Limits of the Primary Bay Area Airports?**
- ◆ **When Are These Limits Likely to Be Reached?**
- ◆ **What Strategies Offer the Greatest Potential to Allow the Region to Efficiently Accommodate Future Aviation Demand?**
  - **Redistribution of Traffic Between the Primary Airports**
  - Secondary Airports (Out-of-Region)
  - Demand Management
  - New ATC Technologies
  - High Speed Rail
  - GA Reliever Airports

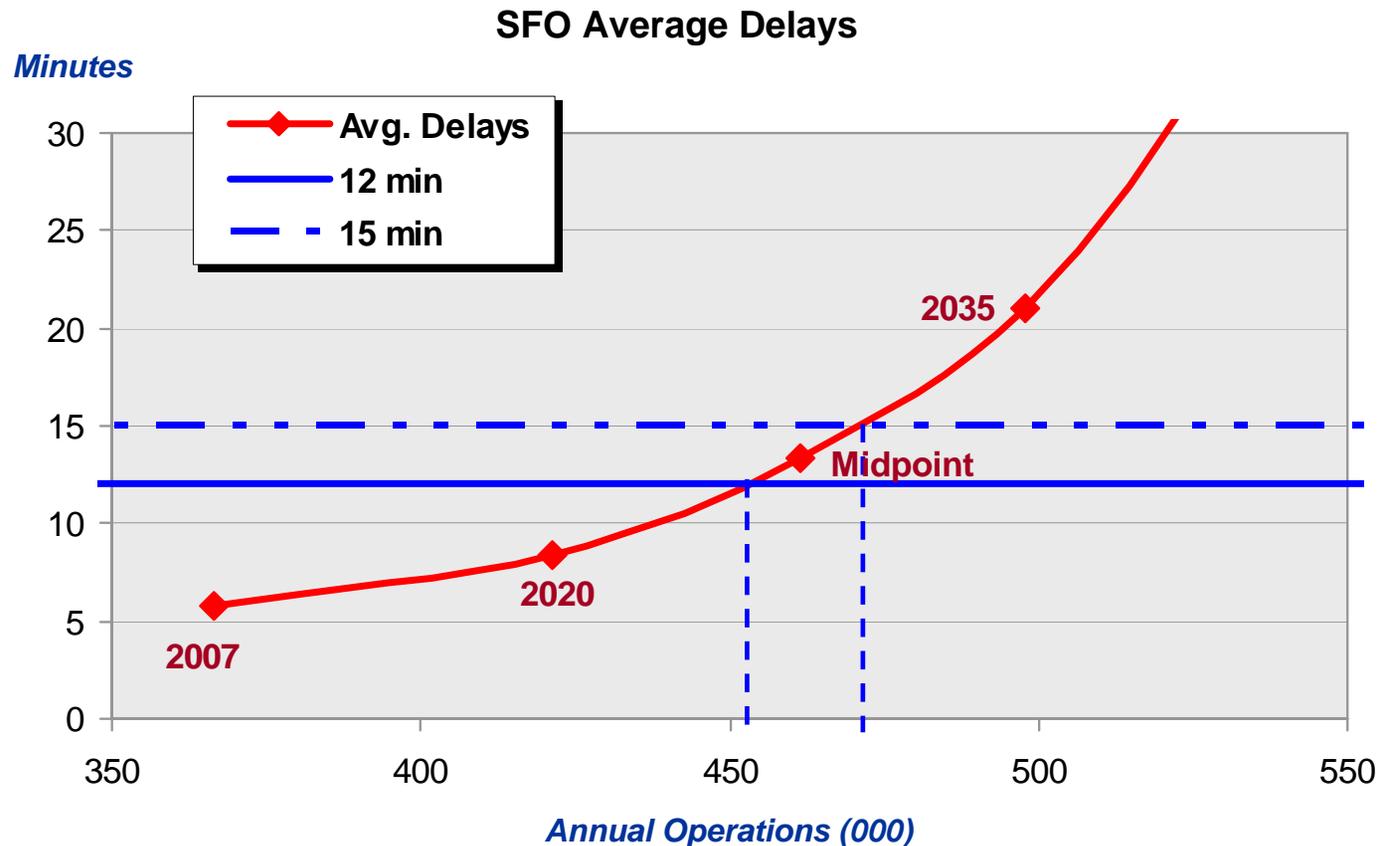
## Purpose for Redistribution Scenario

- ◆ If New ATC and/or Demand Management Cannot Successfully Mitigate the High Levels of Demand and Delay Forecasted for SFO in 2035, it is Likely that Some Traffic Would Shift to Other Primary Airports
- ◆ Traffic Most Likely to Shift Would be Domestic O&D Passengers

Forecast SFO Traffic Mix  
2035



# Based on the Unconstrained Forecasts, Average SFO Delays will Exceed 20 Minutes by 2035



# **The Build-Up of Delays at SFO Will Encourage a Shift of Demand to OAK and SJC**

- ◆ **Excessive Delays at SFO will Produce Added Costs to Airlines and Passengers**
- ◆ **Heavy Congestion and Delays at SFO will Create Incentives for Airlines and Passengers to Make Greater Use of Available Capacity at OAK and SJC**
- ◆ **The Degree of Traffic Redistribution will Depend on Airline Decisions to Expand Services at Competitive Fares at OAK and SJC**
- ◆ **However, Airline Decisions are Based on Expected Profitability—Not on Best Accommodating Future Bay Area Aviation Demand**

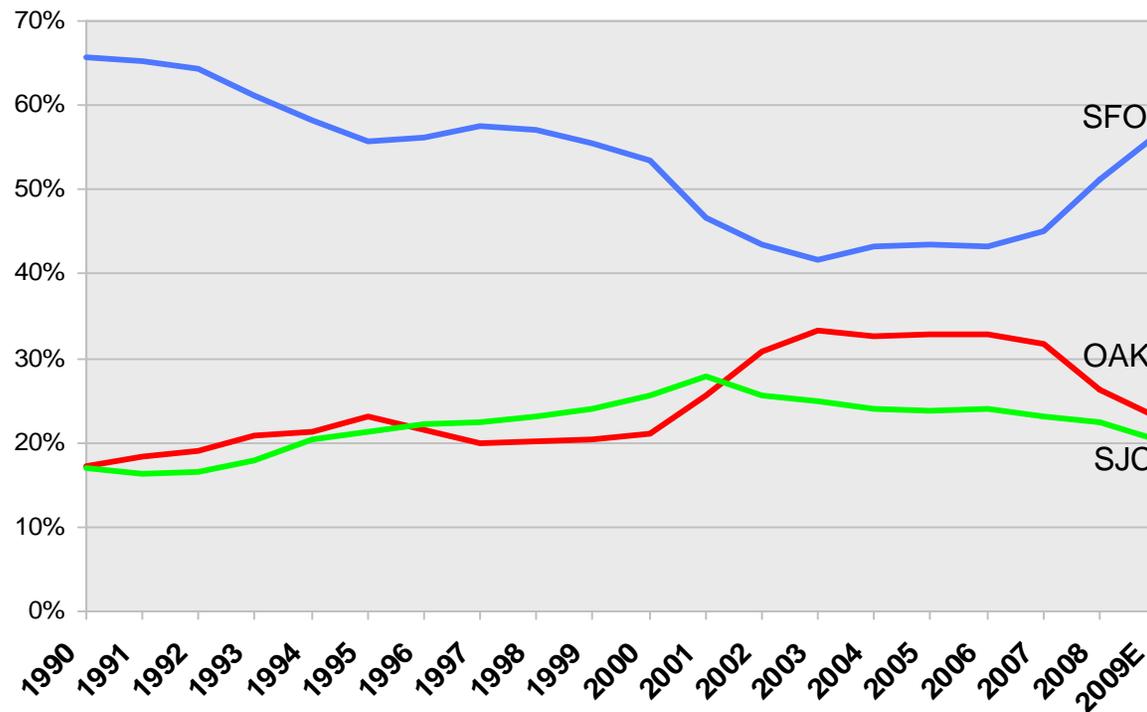
## **When SFO was Heavily Delayed in the 1990's, OAK and SJC Increased Their Shares of Bay Area Regional Demand**

- ◆ **Throughout the 1990's, SFO was One of the Most Heavily Delayed Airports in the U.S.**
- ◆ **These Delays Contributed to Service Expansion and Increased Traffic Shares at OAK and SJC**
  - OAK Increased its Share of Bay Area Domestic O&D Passengers from 20% in the Late 1990's Up to a Peak of 33% from 2003 to 2006
  - SJC Share Gains were Less Pronounced (from approx. 22% up to 26% in 2002)
- ◆ **The Share Gains Experienced at OAK and SJC Occurred Gradually, and Lagged the Onset of Serious SFO Delays by Several Years**

# However, the Share Gains Experienced at OAK and SJC Have Been Completely Eroded by Recent Developments

## Primary Airport Shares of Bay Area Domestic O&D Passengers

CY 1990 – CY 2009



Year	Share of Bay Area Dom O&D Psgrs		
	OAK	SFO	SJC
1990	17.2%	65.6%	17.1%
1991	18.4%	65.2%	16.4%
1992	19.1%	64.3%	16.6%
1993	20.9%	61.2%	17.9%
1994	21.4%	58.3%	20.3%
1995	23.1%	55.7%	21.2%
1996	21.5%	56.1%	22.3%
1997	20.0%	57.5%	22.5%
1998	20.1%	57.0%	23.0%
1999	20.5%	55.5%	24.1%
2000	21.1%	53.4%	25.5%
2001	25.6%	46.6%	27.8%
2002	30.9%	43.4%	25.7%
2003	33.4%	41.6%	25.0%
2004	32.6%	43.3%	24.1%
2005	32.8%	43.4%	23.8%
2006	32.9%	43.2%	24.0%
2007	31.7%	45.1%	23.2%
2008	26.3%	51.2%	22.5%
2009E	23.1%	56.5%	20.4%

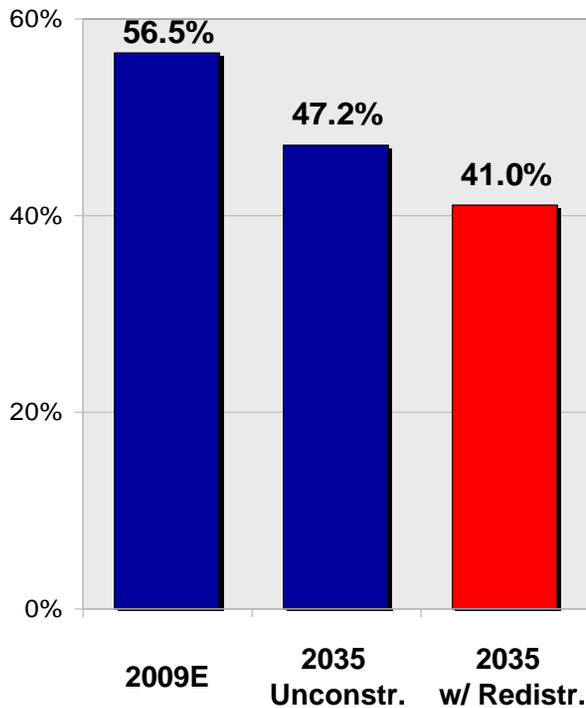
**The 2007 Entry of Southwest Airlines, Virgin America and JetBlue Produced a Major Increase in SFO's Share of Bay Area Domestic Passengers**

# **We Expect that a Future Redistribution of Bay Area Traffic will Largely Mirror What has Occurred in the Past**

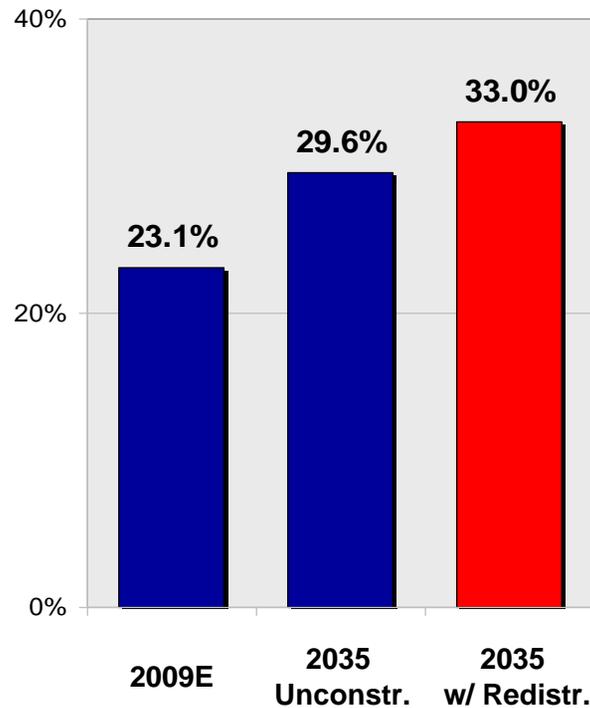
- ◆ **Excessive Congestion and Delays at SFO will Lead to Slowing of Growth**
- ◆ **Airlines and Passengers will Find OAK and SJC Relatively More Attractive, Leading to Increases in Domestic Services and Traffic Shares at Both Airports**
- ◆ **Airline Decisions which will Drive Redistribution between the Primary Airports Cannot Be Predicted with Any Degree of Certainty**
- ◆ **For the Redistribution Scenario, We have Assumed that Both OAK and SJC Return to Their Historic Peak Shares of Bay Area Domestic Traffic**
  - OAK Peak Historic Share: 33%
  - SJC Peak Historic Share: 26%/<sup>1</sup>

# We Expect Redistribution to Produce a Meaningful Shift in Airport Utilization by Bay Area Domestic Passengers

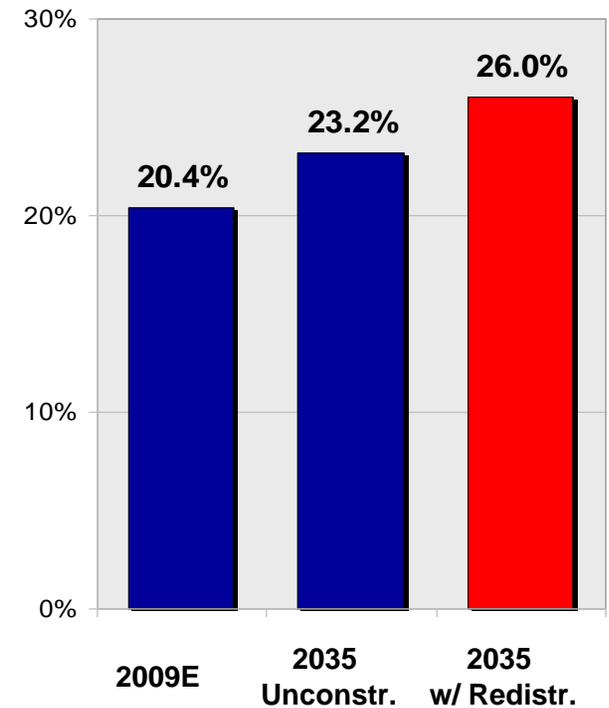
**SFO Share of Bay Area Domestic O&D Passengers**



**OAK Share of Bay Area Domestic O&D Passengers**



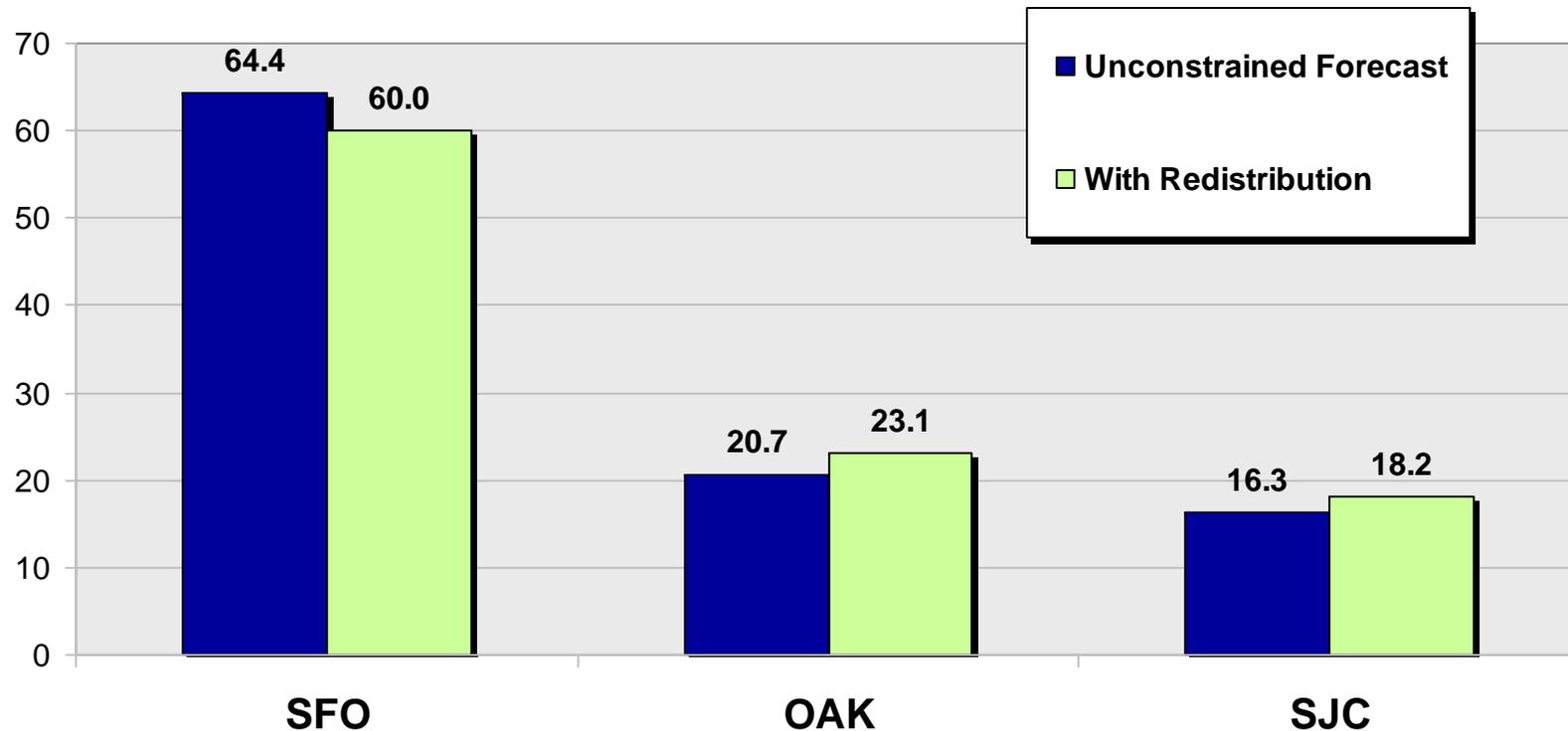
**SJC Share of Bay Area Domestic O&D Passengers**



# The Redistribution Scenario Reduces SFO Passenger Demand from 64M to 60M in 2035, Shifting Over 4 Million Passengers to OAK and SJC

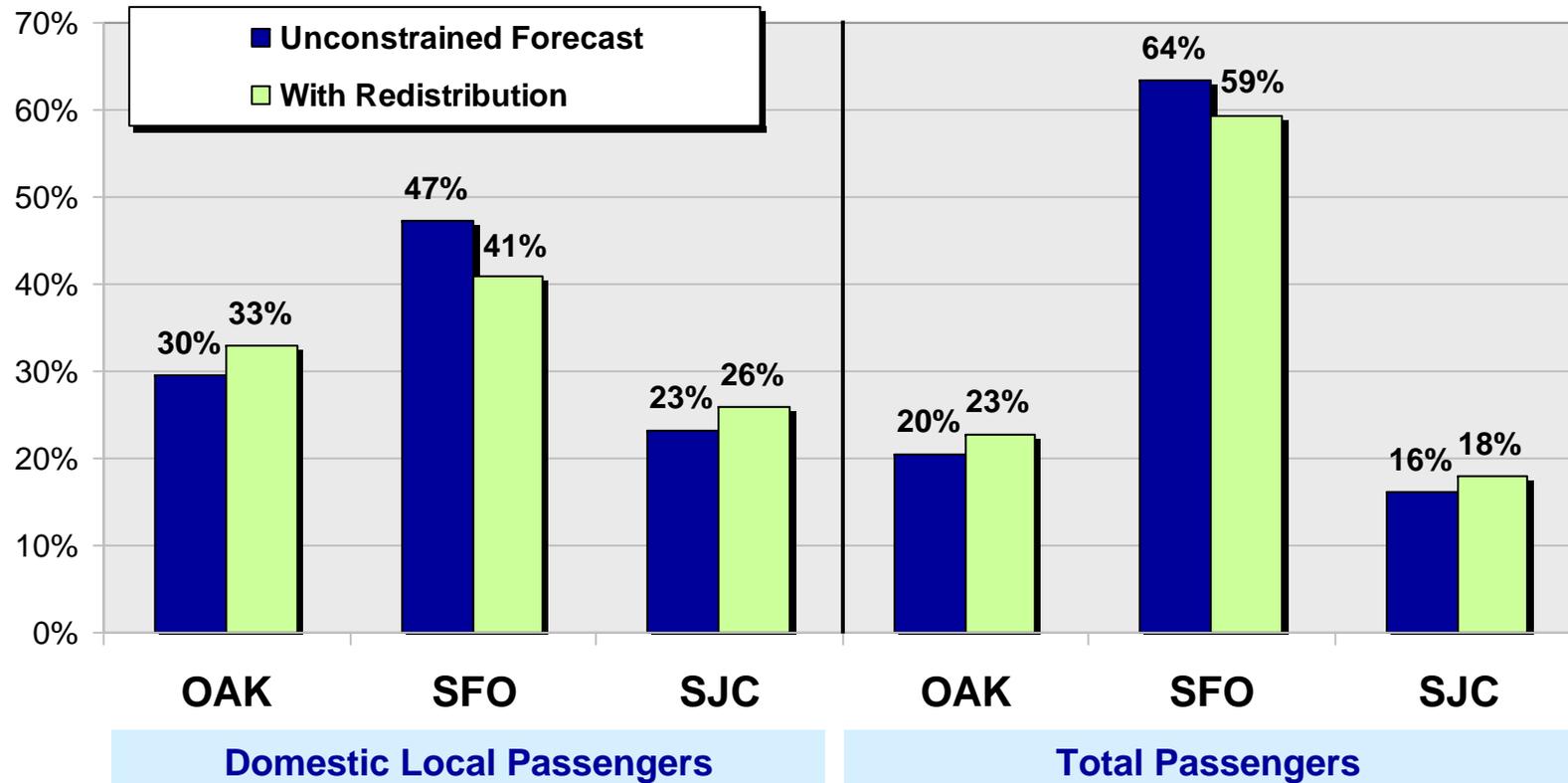
Forecast Airport Passengers  
2035

Millions of  
Passengers



# After Redistribution, SFO's Share of Bay Area Domestic O&D and Total Passengers will Decline

2035 Airport Passengers Shares  
*Unconstrained Forecast vs. Redistribution Scenario*





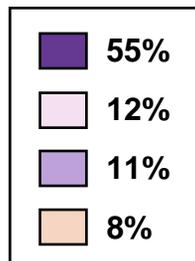
## APPENDIX



# SFO Draws Domestic Passengers From Across the Bay Area Region

Pct. of SFO Domestic O&D Passengers by Ground Origin

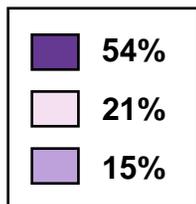
2006



# The Majority of OAK's 2006 Domestic Passengers Originated From the East Bay Region

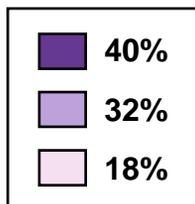
Pct. of OAK Domestic  
O&D Passengers by  
Ground Origin

2006



# SJC Draws Passengers Predominantly From the Southern Portions of the Bay Area and Surrounding External Zones

Pct. of SJC Domestic  
O&D Passengers by  
Ground Origin  
2006





# ALTERNATIVE STRATEGIES FOR ACCOMMODATING THE BAY AREA'S FUTURE AVIATION DEMAND

## *Demand Management Scenario*

*Prepared for:*

**Regional Airport Planning Committee**



**DRAFT**

November 20, 2009

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# Critical Study Questions

- ◆ **What Are the Capacity Limits of the Primary Bay Area Airports?**
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  - **Demand Management**
  - New ATC Technologies
  - High Speed Rail
  - GA Reliever Airports

# There is Growing Recognition that Demand Management Mechanisms Must be Available to Airports to Meet Future System Demand

## *Potential Demand Management Mechanisms*

- ◆ **Slot Controls** (*DCA/LGA*)
- ◆ **FAA Negotiated Caps** (*ORD/JFK/EWR*)
- ◆ **Perimeter Rules** (*LGA/DCA/Love Field*)
- ◆ **Passenger Caps** (*Orange County*)
- ◆ **Direct Negotiations Between the Airport and the Airlines**
- ◆ **Limits on Available Gates** (*LAX*)
- ◆ **Minimum Aircraft Size Rules**
- ◆ **Peak Period Pricing** (*BOS*)
  - *Explicitly Permitted at Congested Airports by New U.S. DOT Rates and Charges Policy*

***Focus of Analysis is Not to Define a Specific Program, but Rather to Estimate the Potential Capacity and Delay Benefits that Demand Management Could Produce***



***The Demand Management Scenario will be Focused on SFO, Since OAK and SJC are not Forecast to Incur Serious Delays***

# **New U.S. DOT Policy Permits Congested Airports to Use Pricing Tools to Increase Efficiency and Reduce Delay**

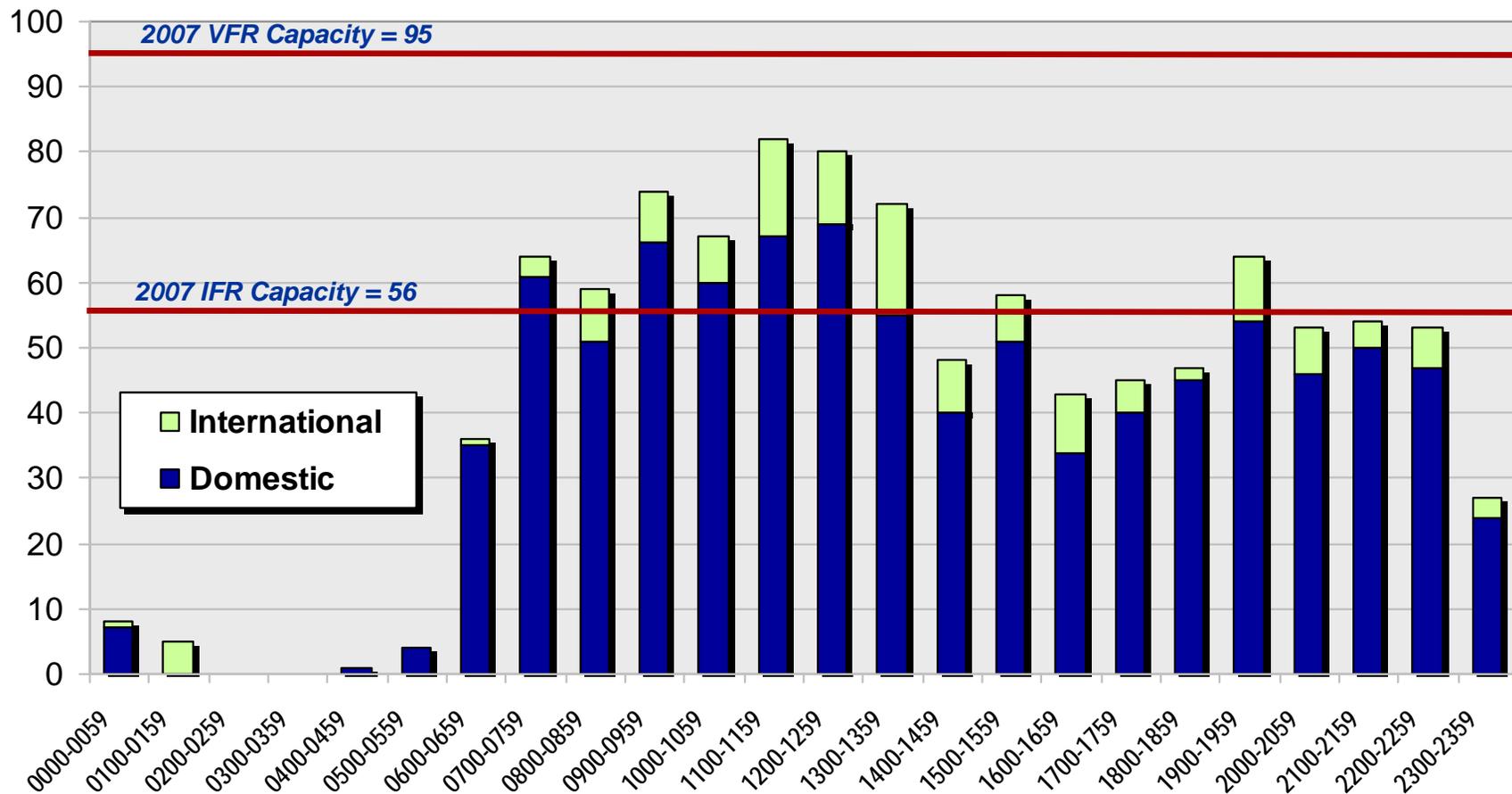
***Airport Demand Management Programs  
Such as Peak Period Pricing Can Reduce Congestion and  
Delay by Creating Financial Incentives to:***

- ◆ ***Spread Flight Activity  
More Evenly Across  
the Day***
- ◆ ***Increase Aircraft Size  
(Upgauging)***



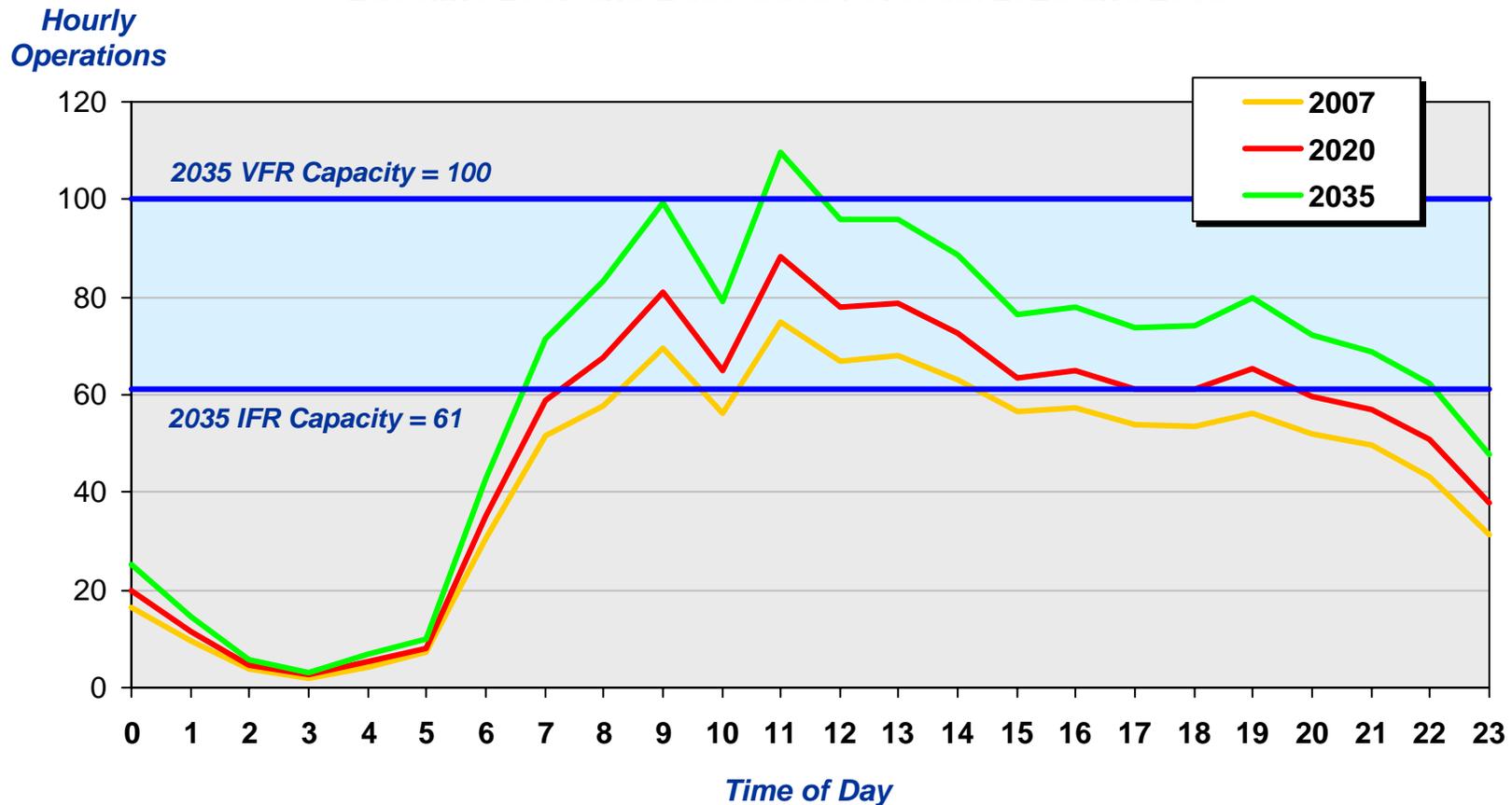
# Current Operations at SFO Peak During the Late Morning and are Well Above the Airport's IFR Capacity

Weekday Scheduled Operations at SFO by Hour  
August 2009



# By 2035, Late Morning Demand Will Exceed SFO's Maximum VFR Capacity while IFR Capacity Will Be Exceeded Throughout the Day

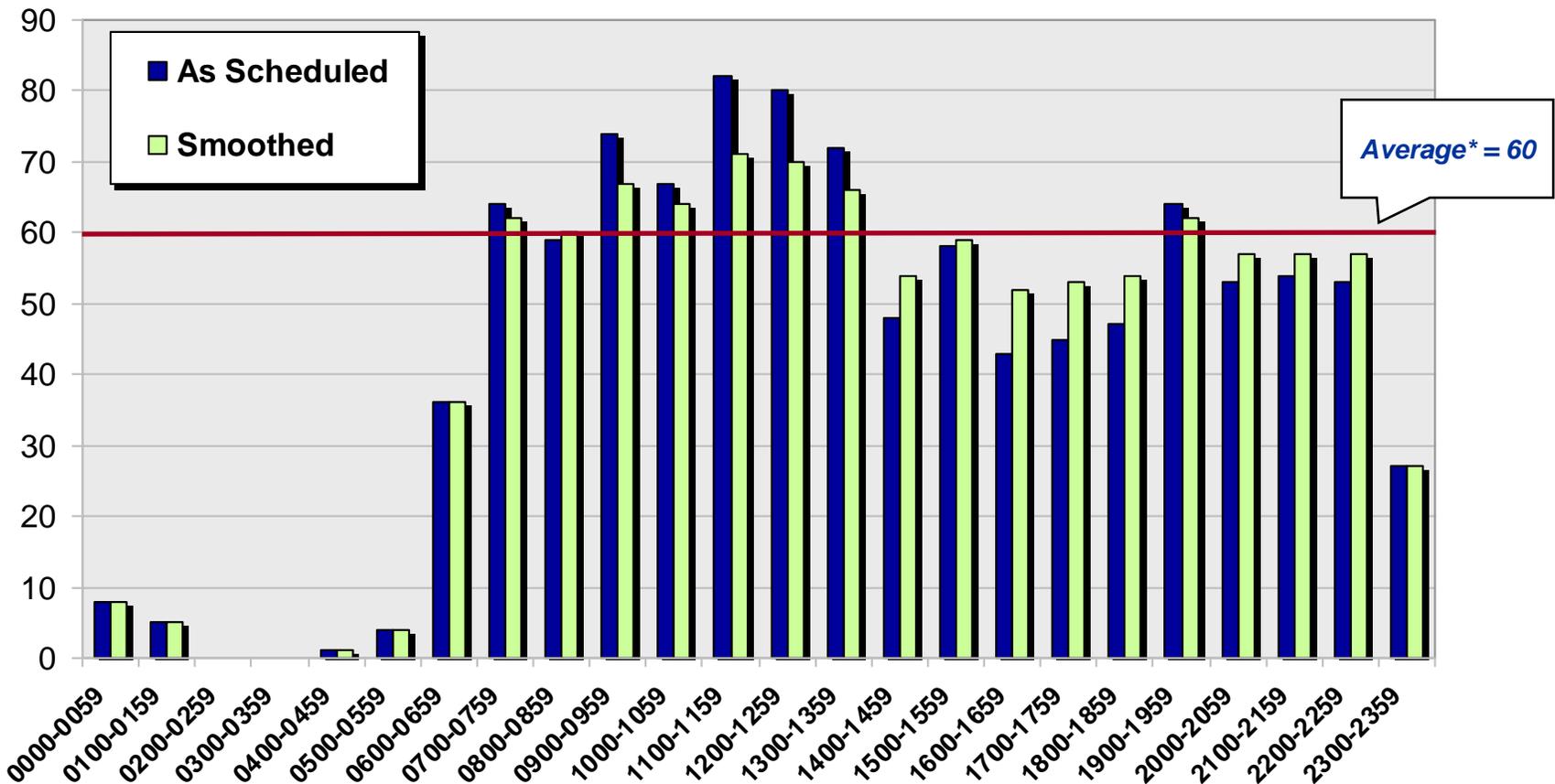
Average Weekday Aircraft Operations by Hour  
Baseline 2007 and Base Case Forecast 2020 and 2035



# Differential Pricing Between Peak and Off-Peak Periods Can Encourage Airlines to Spread Flights More Evenly Over the Day

## Example of Eliminating 50% of Current SFO Peaking

Weekday Scheduled Operations at SFO by Hour (August 2009)



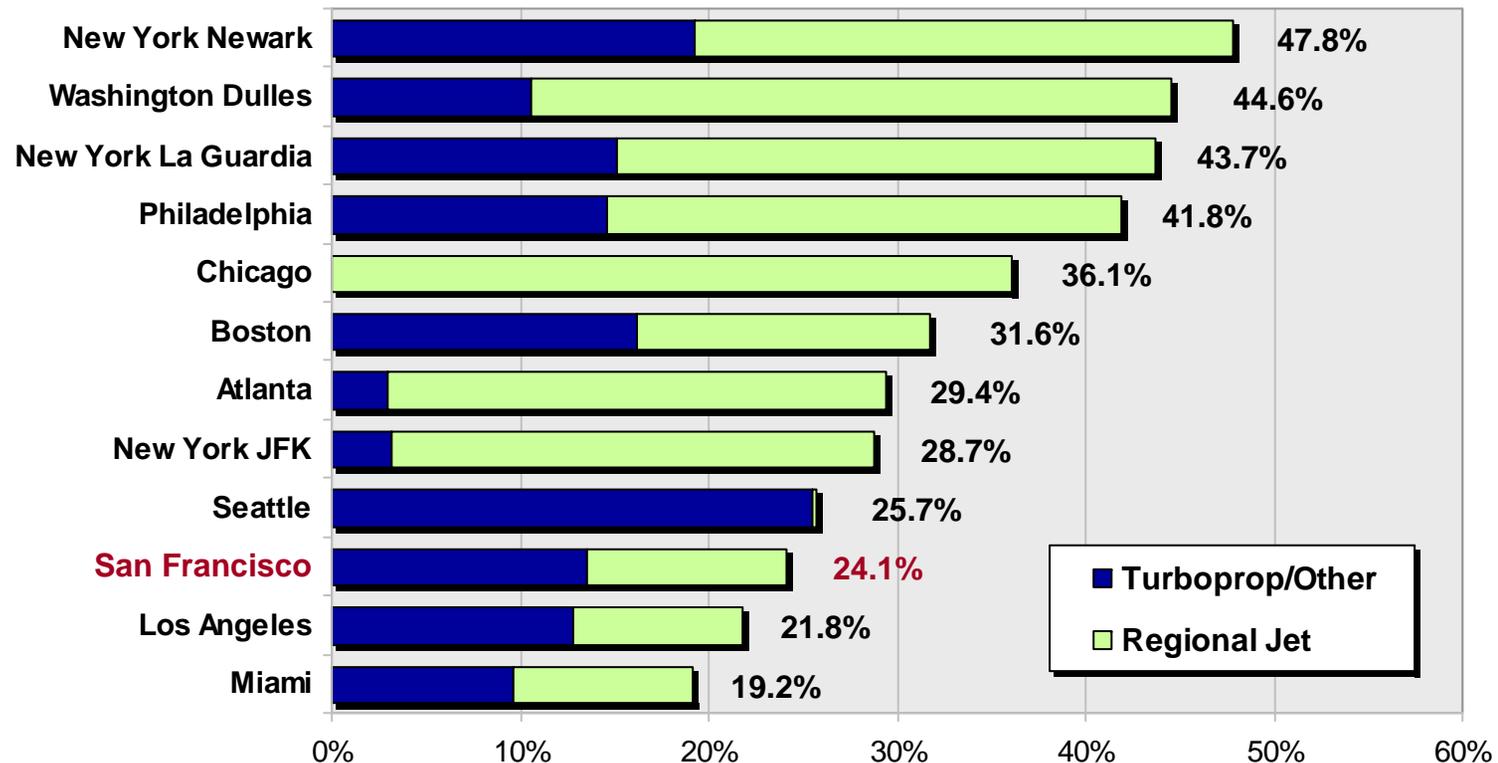
## However, Airline Scheduling Considerations Can Limit the Extent of Peak Smoothing that is Feasible

- ◆ **Flights to and from Carrier Hubs Generally Timed to Meet Connecting Banks**
- ◆ **Eastbound Transcontinental Flights Typically Depart West Coast Cities Before 3:00pm**
- ◆ **Long-haul International Flights Most Often Timed to Depart and Arrive at Reasonable Hours**
- ◆ **Aircraft Must be Turned Quickly to Maintain High Utilization and Control Costs**

***These Factors will Constrain Airlines' Ability to Produce Dramatic Shifts in Flight Timing***

# Although SFO Has a Comparatively Low Share of Domestic Flights Operated with Small Aircraft...

Share of Daily Domestic Departures Using Regional Jet, Turboprop or Other Aircraft with 50 or Fewer Seats  
August 2009

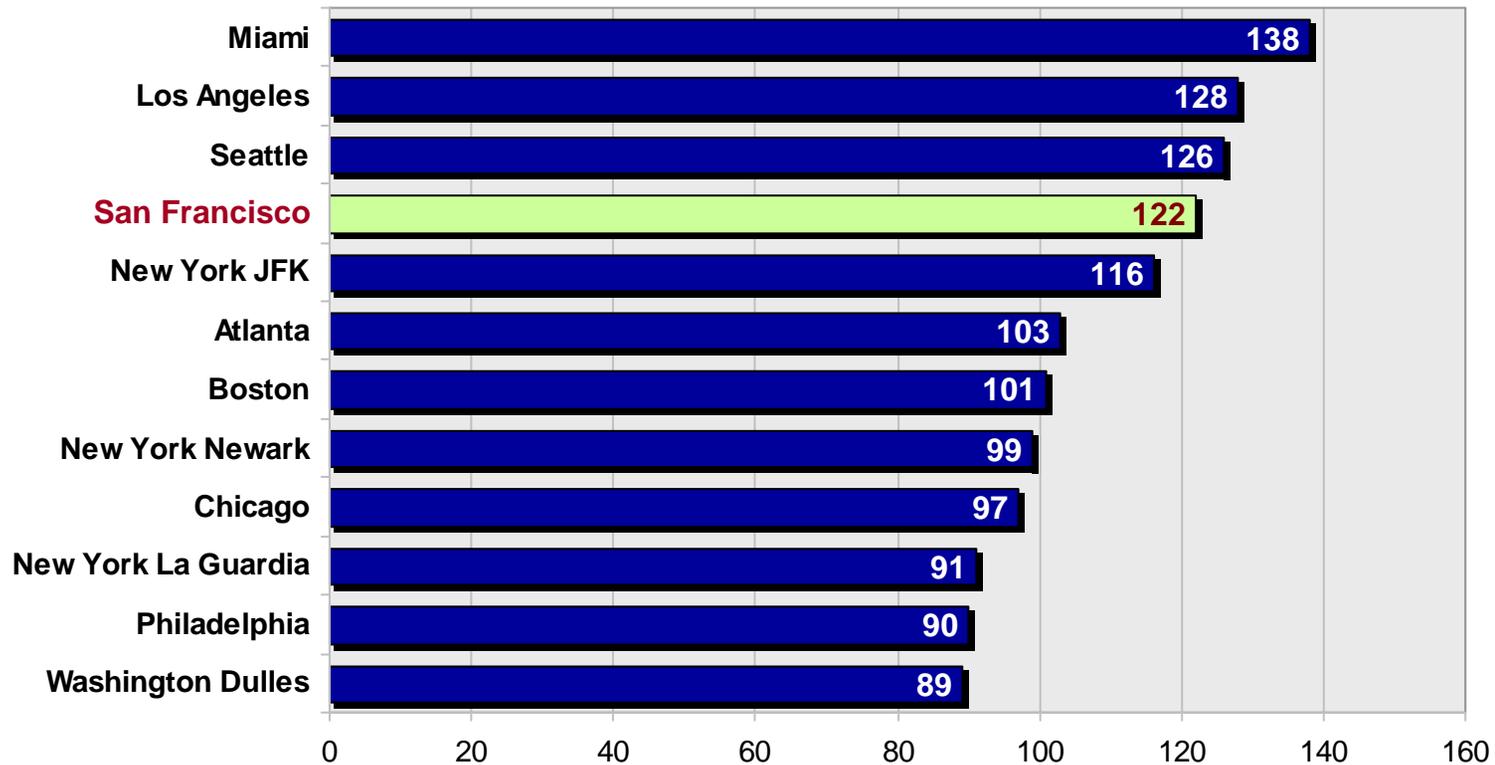


Note: Includes 10 most congested U.S. airports plus Los Angeles and Seattle

Source: OAG Schedules

# ...and One of the Largest Average Aircraft Sizes, SFO Would Nevertheless Benefit From Aircraft Upgauging

Average Seats Per Domestic Departure at Large and Congested Airports  
*August 2009*

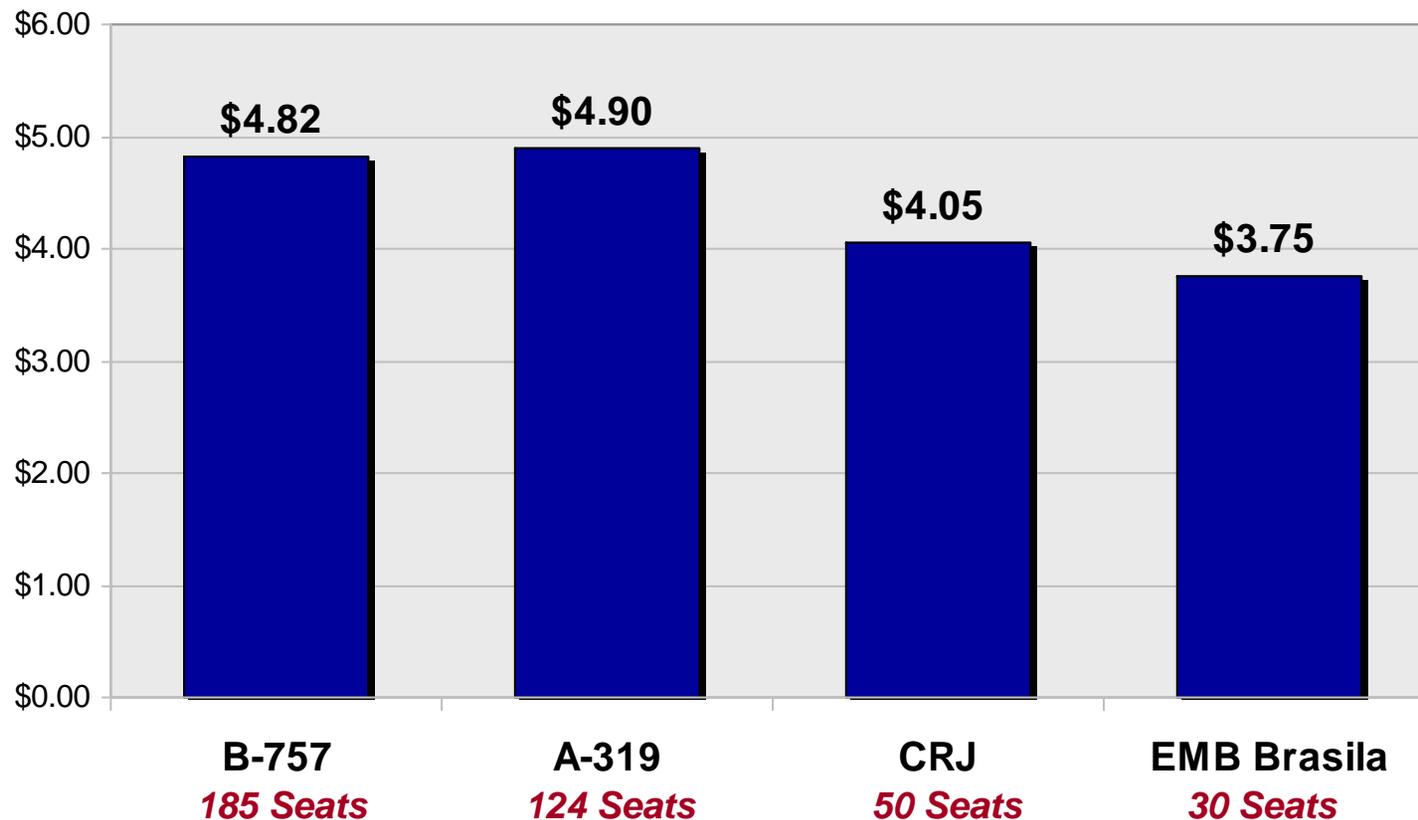


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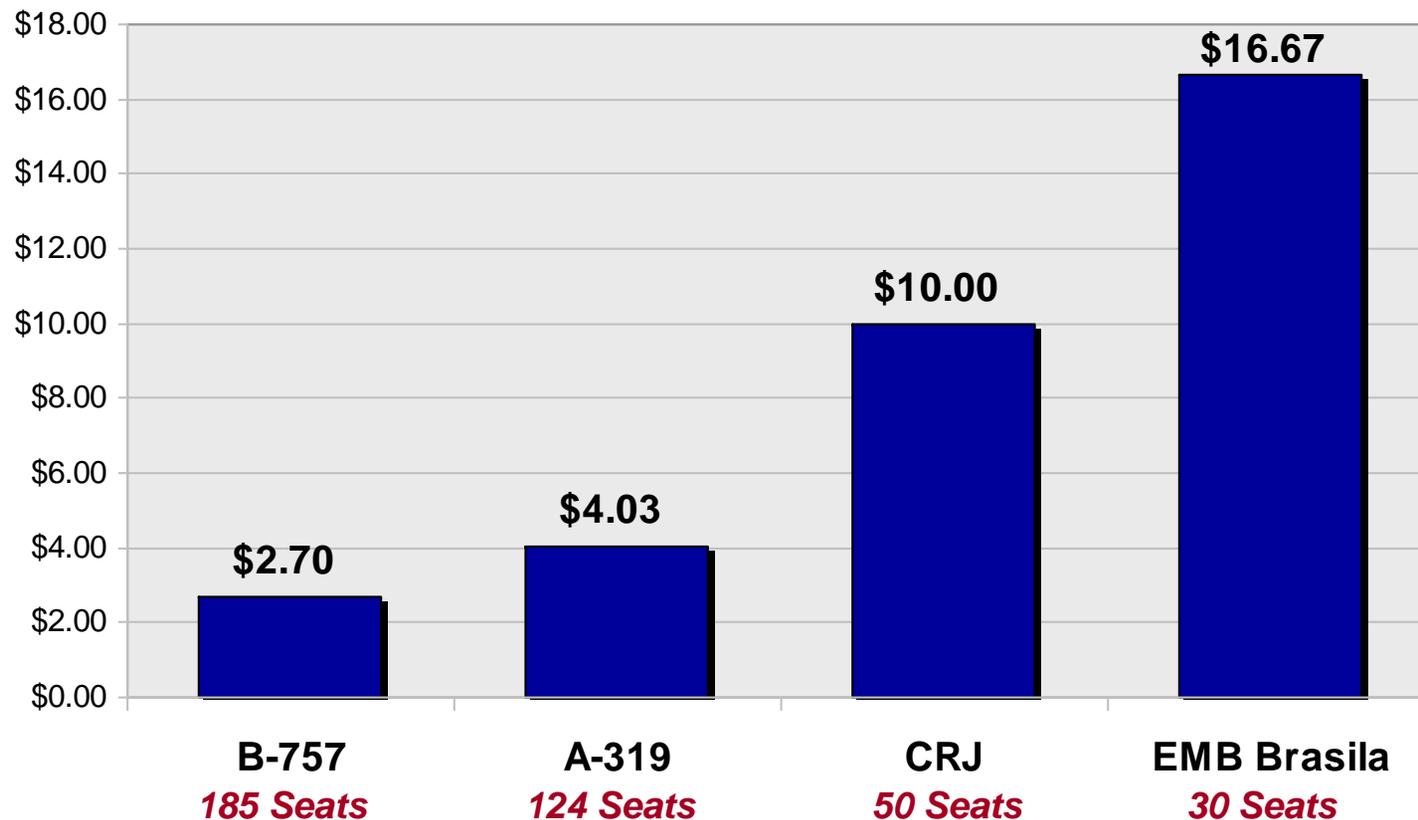
# The Traditional Weight-Based Landing Fee Provides No Financial Advantage to Larger Aircraft

Cost per Seat At \$4.50 per 1,000 lbs



# In Contrast, the Use of a Flat Fee During Congested Periods Creates an Economic Incentive to Use Larger Aircraft

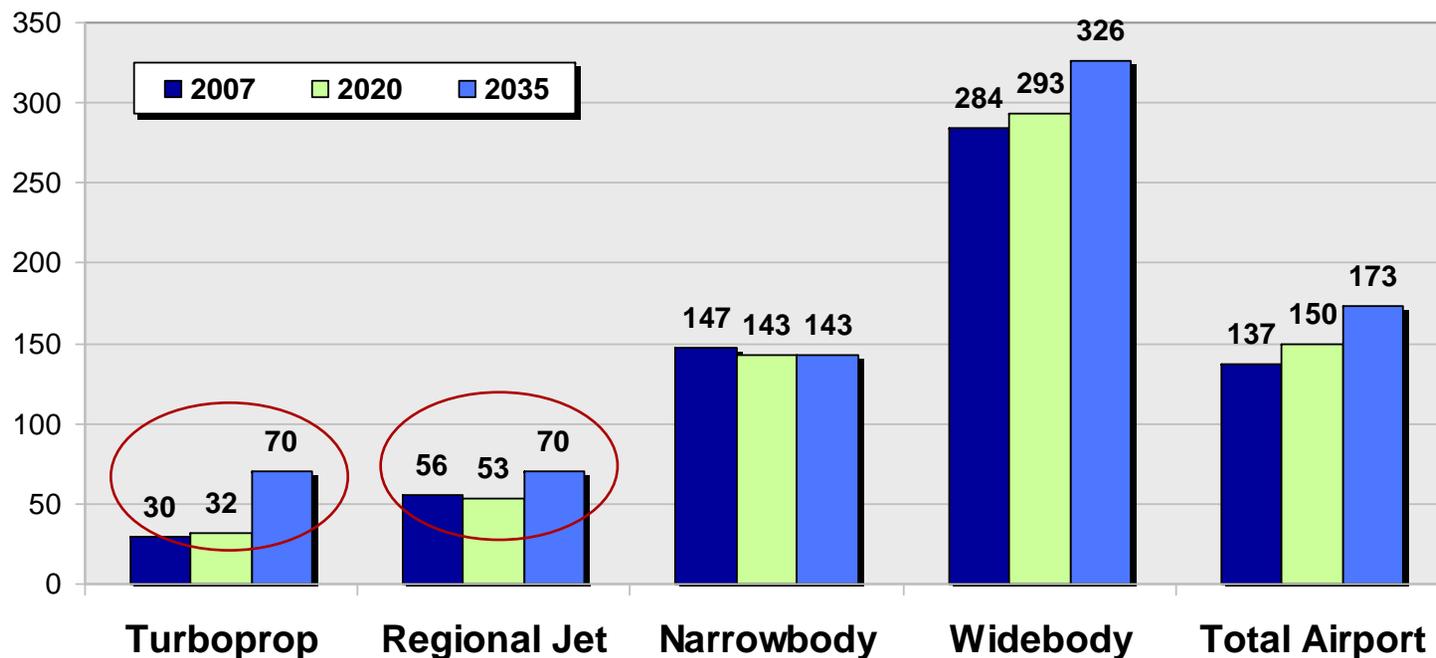
Cost per Seat With a Flat Fee of \$500 per Operation



# The Future Fleet Mix for SFO Already Accounts for Small Aircraft Upgauging, but Predominantly After 2020

## Average Aircraft Size by Aircraft Category

Actual 2007 and Base Case Forecast 2020 and 2035

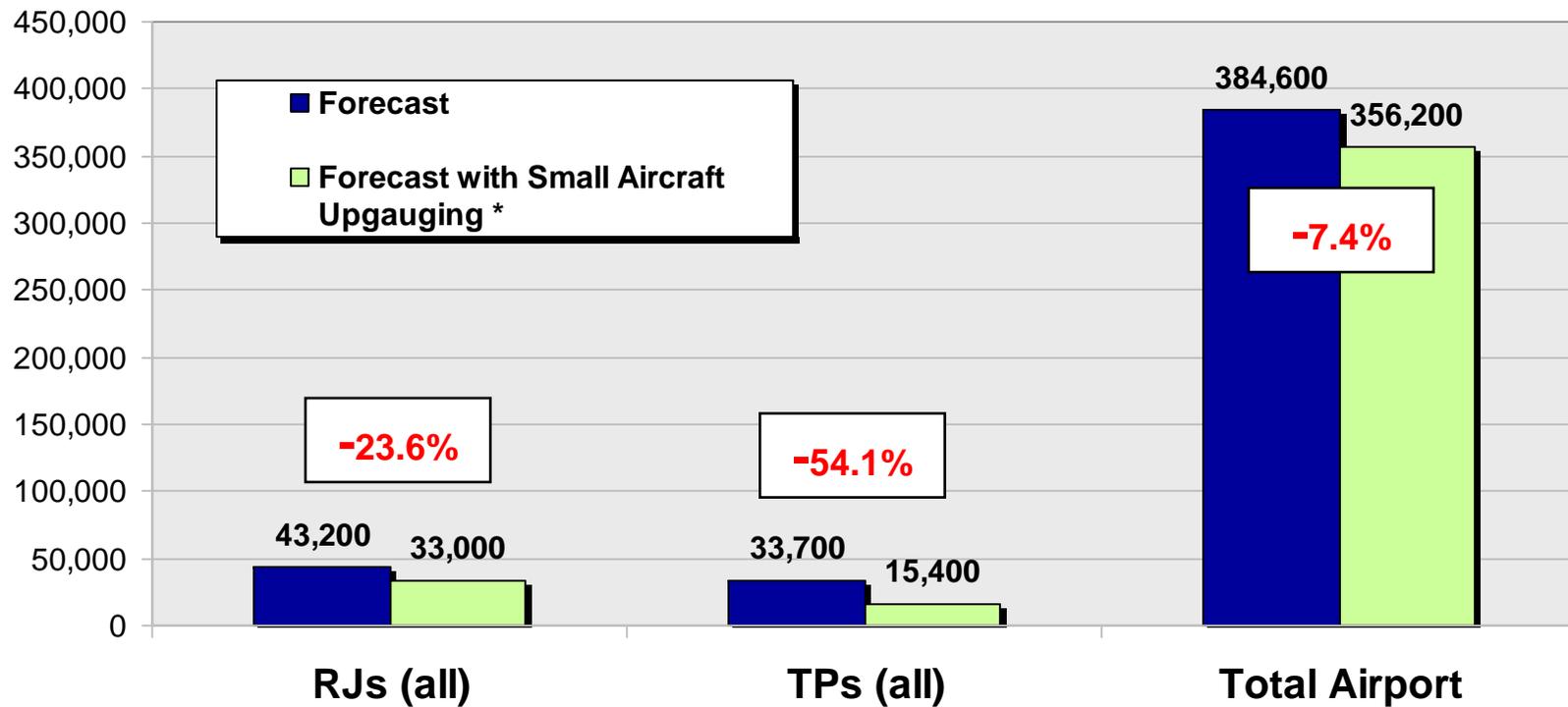


***An Effective Demand Management Program Should Accelerate and Increase the Extent of Small Aircraft Upgauging***

# Accelerating the Upgauging of Small Aircraft Would Reduce SFO's 2020 Passenger Aircraft Operations by 7.4%

## Forecast Annual Scheduled Passenger Aircraft Operations at SFO

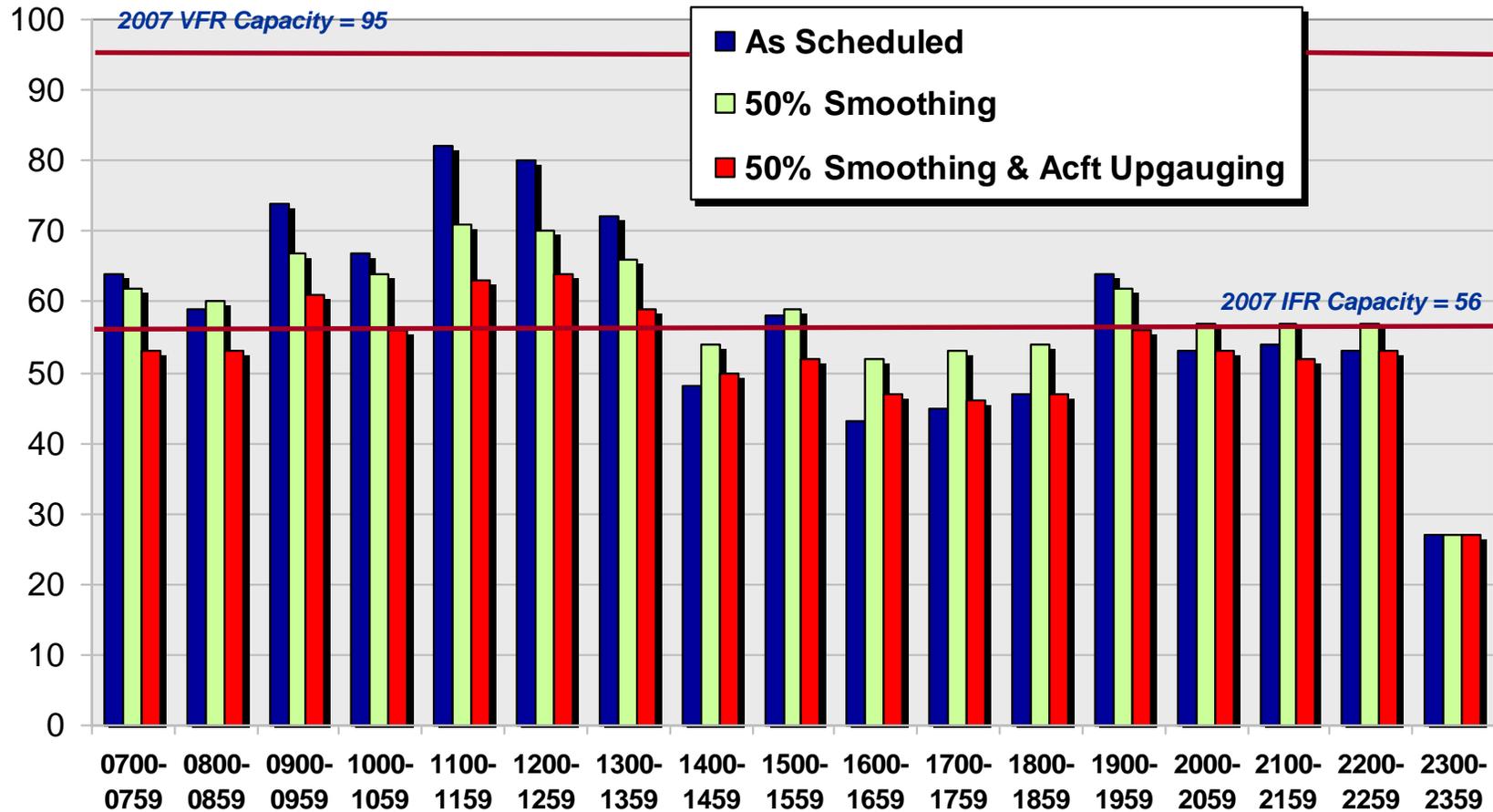
*With and Without Small Aircraft Upgauging*



***However, Benefits in 2035 Would Require Further Upgauging Within SFO's Domestic Fleet***

# The Combination of Peak Smoothing and Aircraft Upgauging can have a Significant Impact on Hourly Demand

Example of 2009 SFO Flight Schedule Impacted by Peak Smoothing and Substitution of Larger Aircraft



## Next Steps

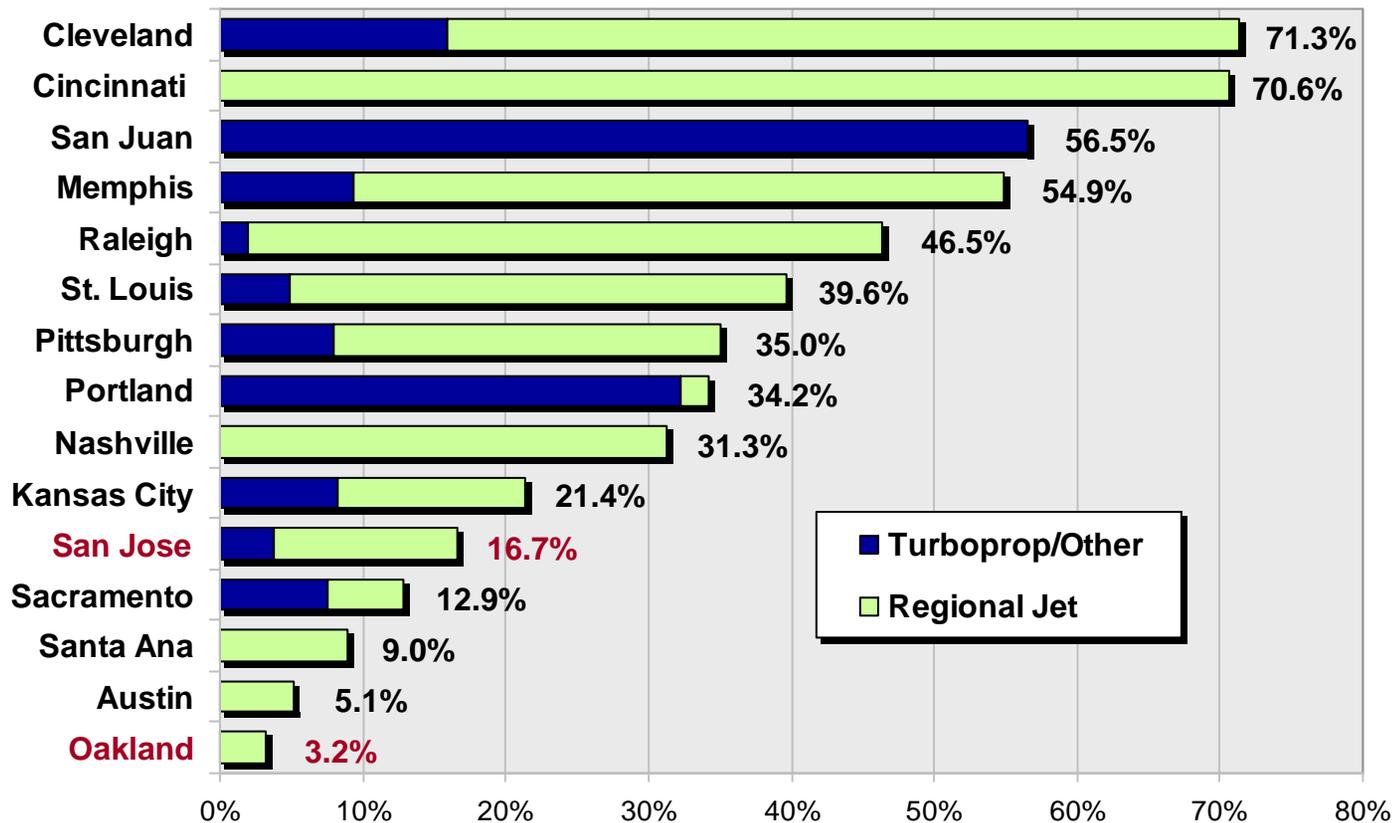
- ◆ **Determine the Extent of Peak Smoothing that is Feasible, Given Scheduling Realities for Domestic and International Airline Service**
- ◆ **Determine the Degree of Aircraft Upgauging that can Realistically Occur**
- ◆ **Adjust SFO Forecasts to Account for Both Factors**
- ◆ **Assess Potential Impacts on SFO Delays, Noise and Air Quality**

## APPENDIX



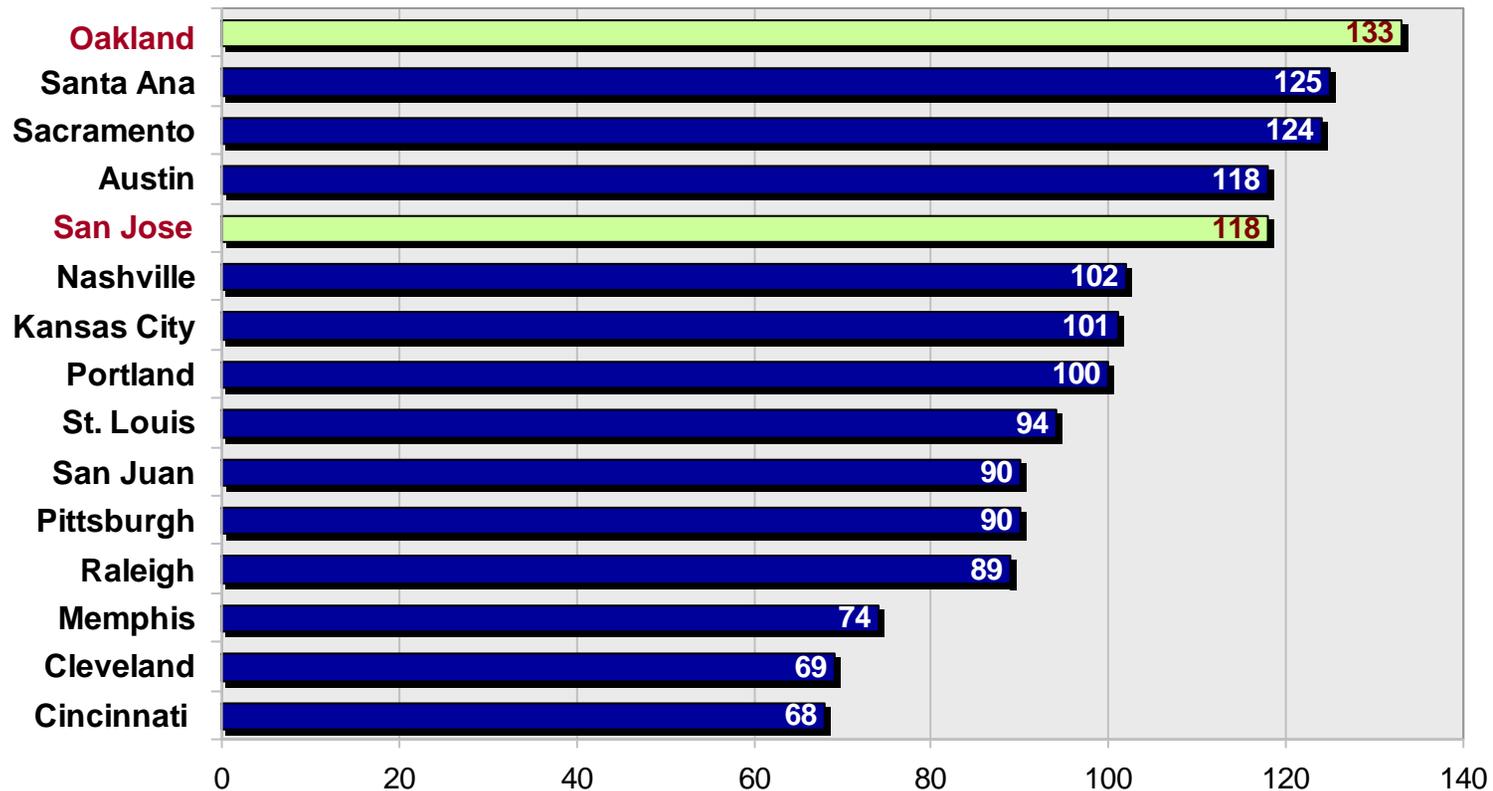
# Compared to Other Top Medium Hub Airports, OAK and SJC Also Have Low Shares of Flights Operated with Small Aircraft

Share of Daily Departures Using Regional Jet, Turboprop or Other Aircraft with 50 or Fewer Seats  
August 2009



# OAK and SJC Rank in the Top 5 Among Top Medium Hub Airports in Terms of Average Aircraft Size

Average Seats Per Departure at Top 15 Medium Hub Airports  
*August 2009*





# ALTERNATIVE STRATEGIES FOR ACCOMMODATING THE BAY AREA'S FUTURE AVIATION DEMAND

## *Out of Region Airports*

*Prepared for:*

**Regional Airport Planning Committee**

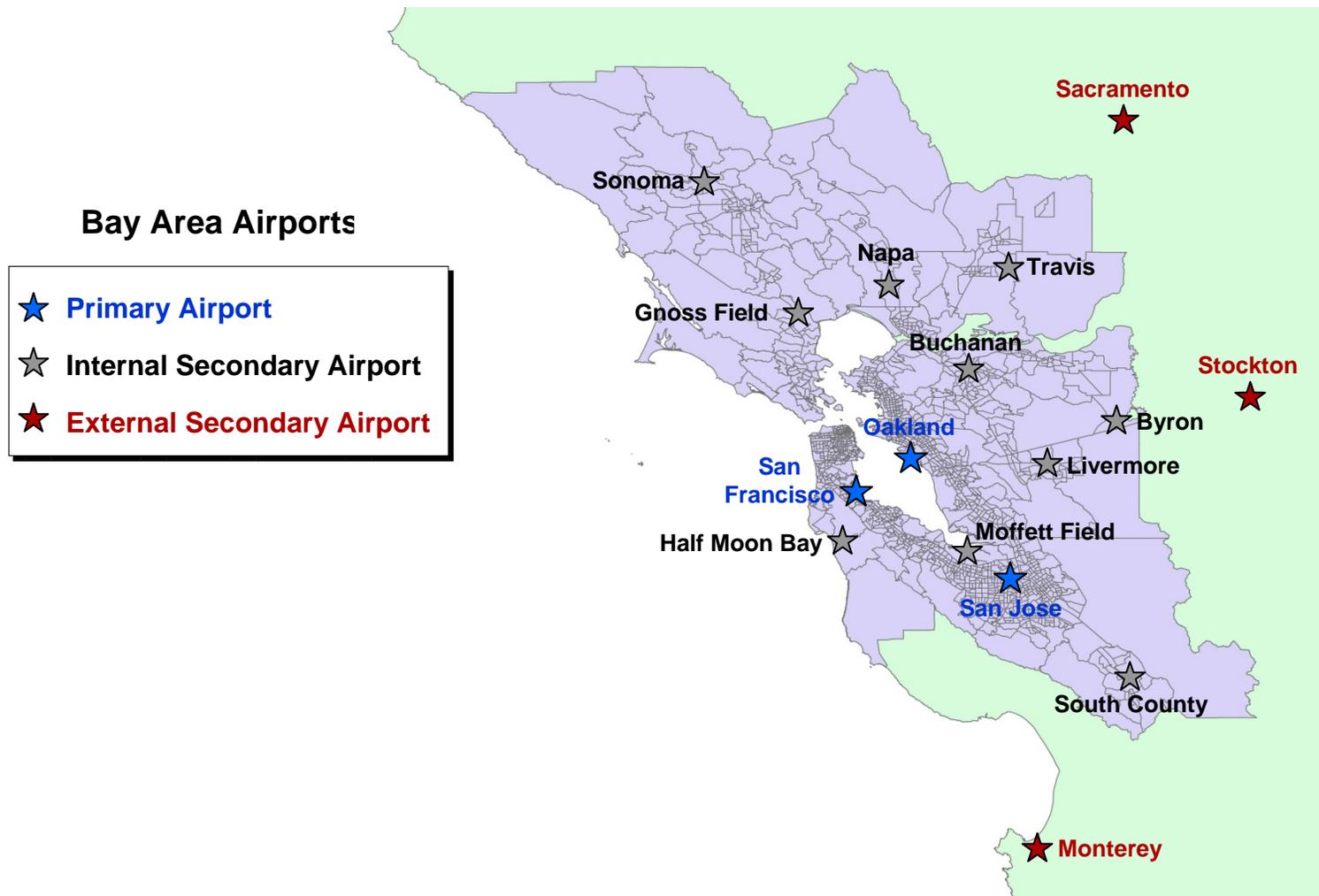


**DRAFT**

November 20, 2009

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# In Addition to Internal Airports, Three Nearby External Airports Were Also Analyzed for Their Ability to Reduce Passenger Demand at the Primary Bay Area Airports



# The External Airports Vary Widely in their Current Size and Air Service Levels

## ◆ Sacramento International Airport

- 10,000,000 passengers in 2008
- 138 daily nonstop departures to 28 destinations
- Southwest Airlines provides 59% of daily seats



## ◆ Monterey Peninsula Airport

- 427,000 passengers in 2008
- 17 daily nonstop departures to 6 destinations
- Served by United, American, US Airways and Allegiant



## ◆ Stockton Metropolitan Airport

- 59,000 passengers in 2008
- 3 weekly nonstop departures to Las Vegas
- Served by Allegiant

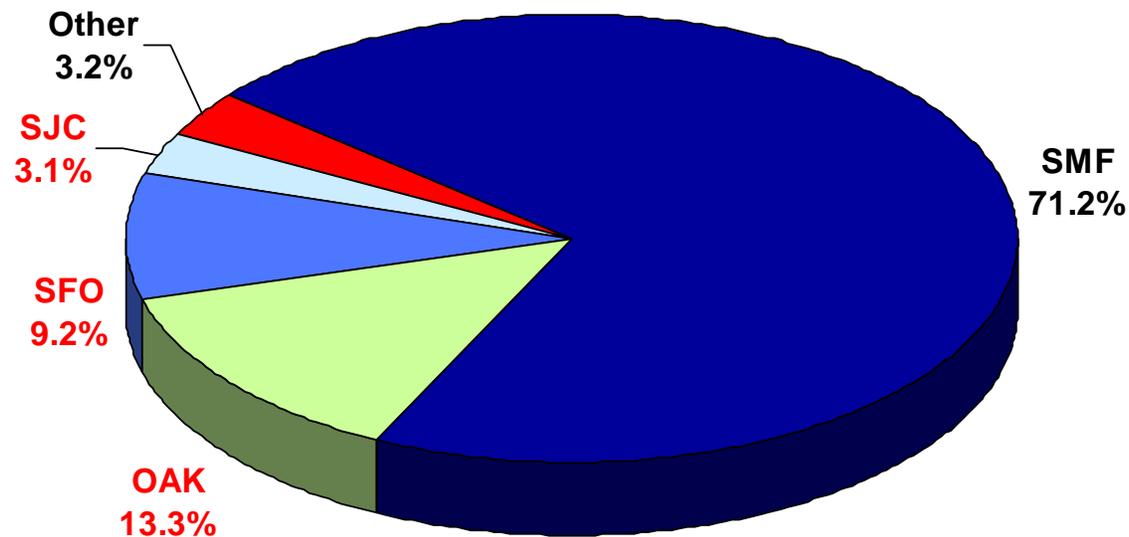


# General Approach for Estimating External Airports Recapture from Bay Area Airports

- ◆ **Coordinated with Each Airport to Collect Latest Studies**
  - Market demand studies
  - Leakage analyses
  - Air passenger surveys
  - Forecasts
  - Air service targets
- ◆ **Forecast New Nonstop Service Potential at External Airports**
- ◆ **Quantified How Many Passengers the New and Expanded Services Could Recapture From the Primary Bay Area Airports**
- ◆ **Estimated the Corresponding Reduction in Aircraft Operations at the Primary Bay Area Airports**

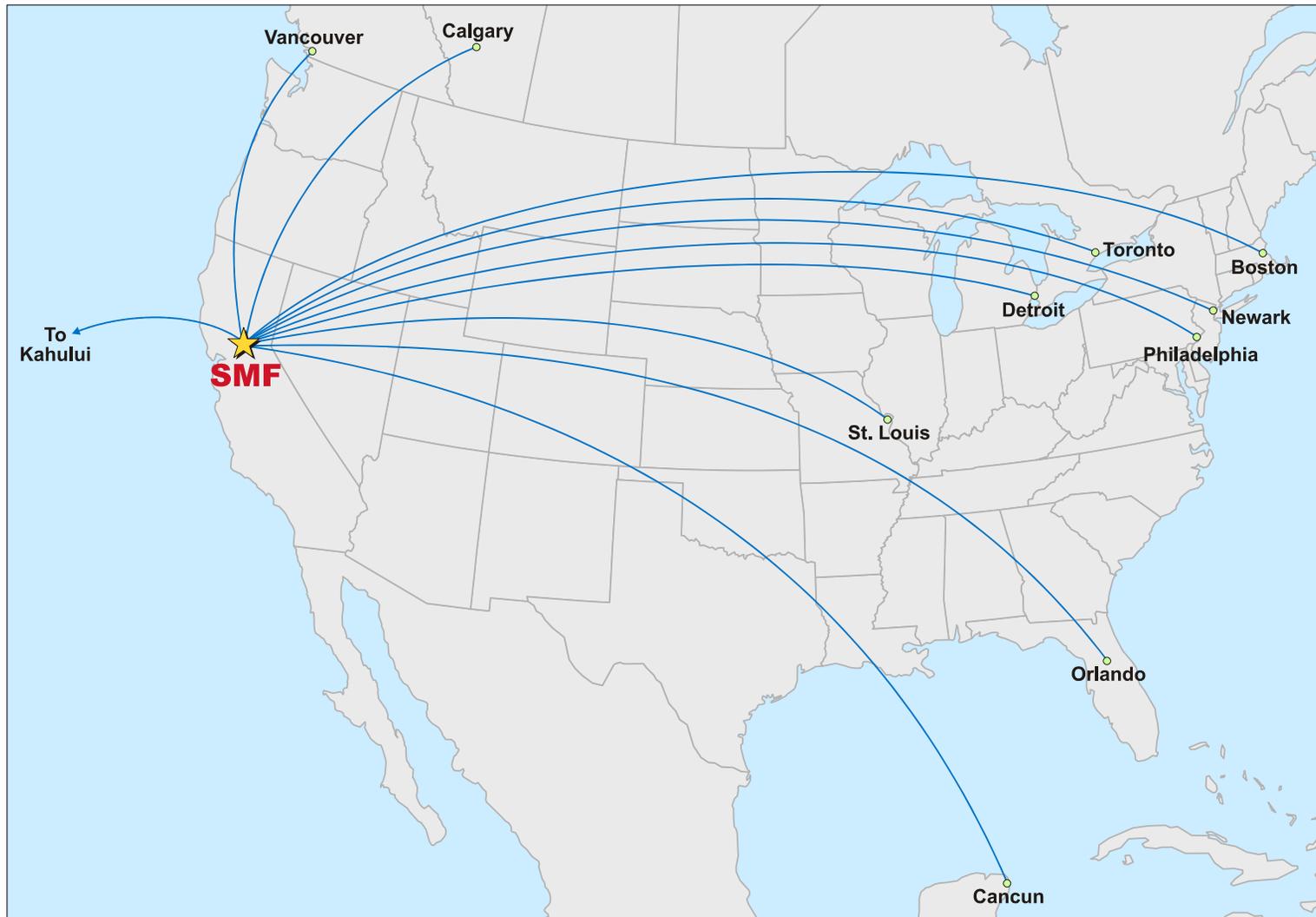
# According to a Sacramento Leakage Study, 26% of Catchment Area Passengers Use a Bay Area Airport

Airports Used by Passengers Originating in the Sacramento Catchment Area  
2005



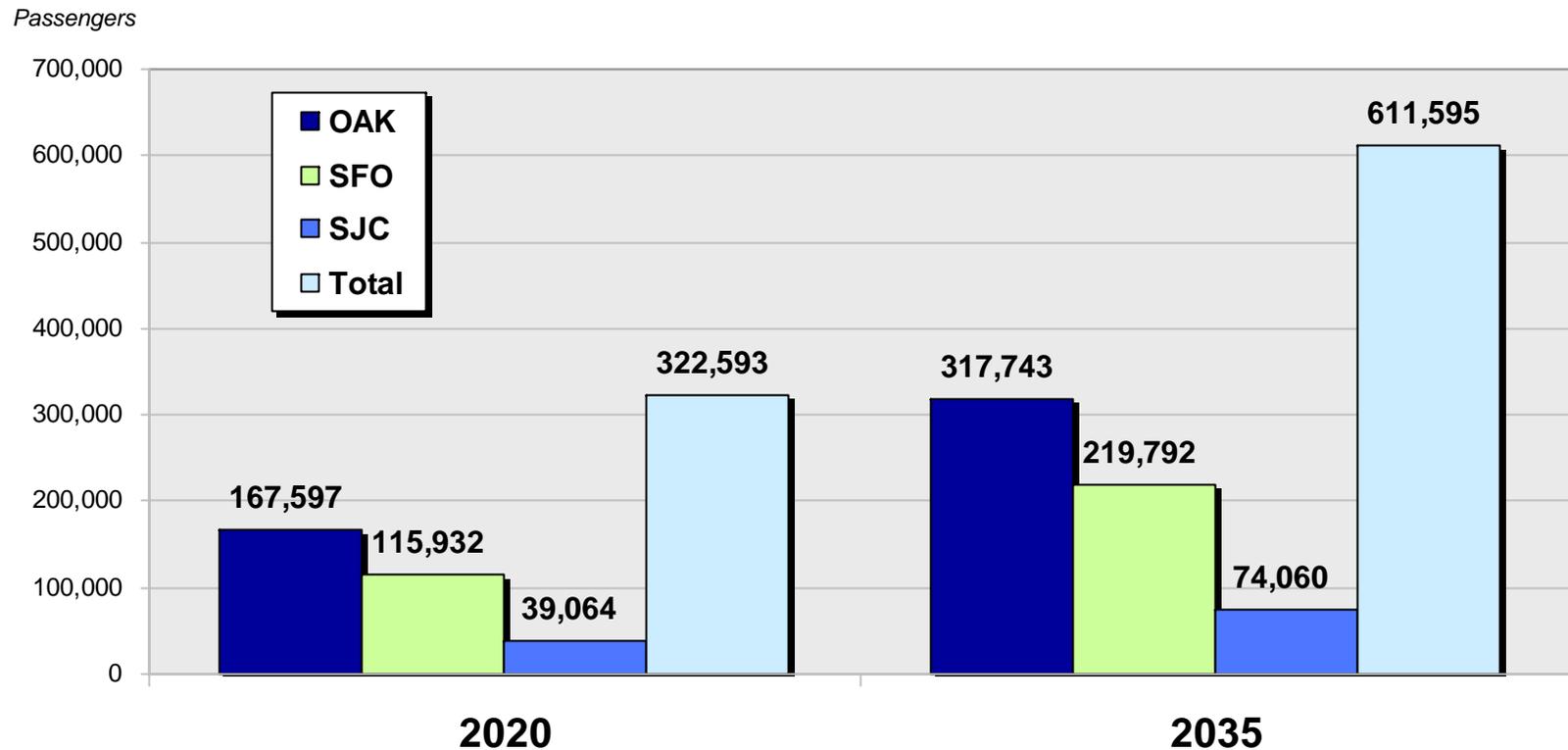
# For Sacramento, We Evaluated the Feasibility of New Nonstop Services to 12 Destinations, Largely Transcon and Transborder Markets

Potential New Nonstop Markets from Sacramento



# In 2035, New Services at Sacramento Could Recapture 612,000 Passengers from the Primary Bay Area Airports

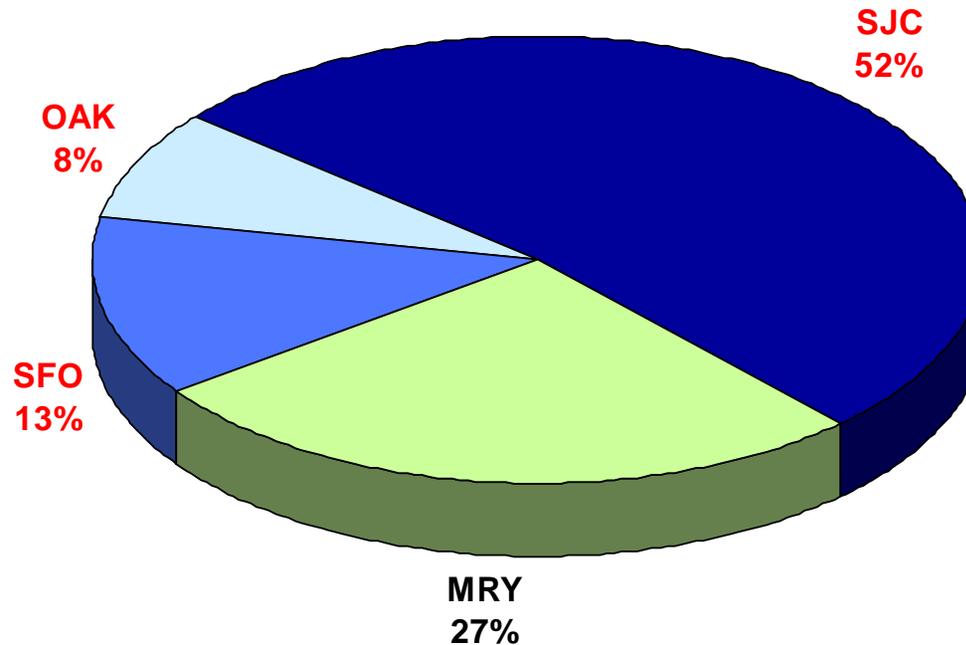
Estimated Sacramento Passenger Recapture from the Bay Area Airports  
2020 and 2035



***Over Half of the Passenger Recapture Would be from OAK***

# 73% of Monterey's Catchment Area Passengers Use a Bay Area Airport

Airports Used by Passengers Originating in the Monterey Catchment Area  
2004



**2008 Monterey Catchment Area O&D Passengers = 1.6M**

# We Evaluated New or Additional Nonstop Services from Monterey to High- Density, Short-Haul Markets and Airline Connecting Hubs

## Candidate Markets for New Nonstop or Additional Services from Monterey



## Monterey's Existing Nonstop Services

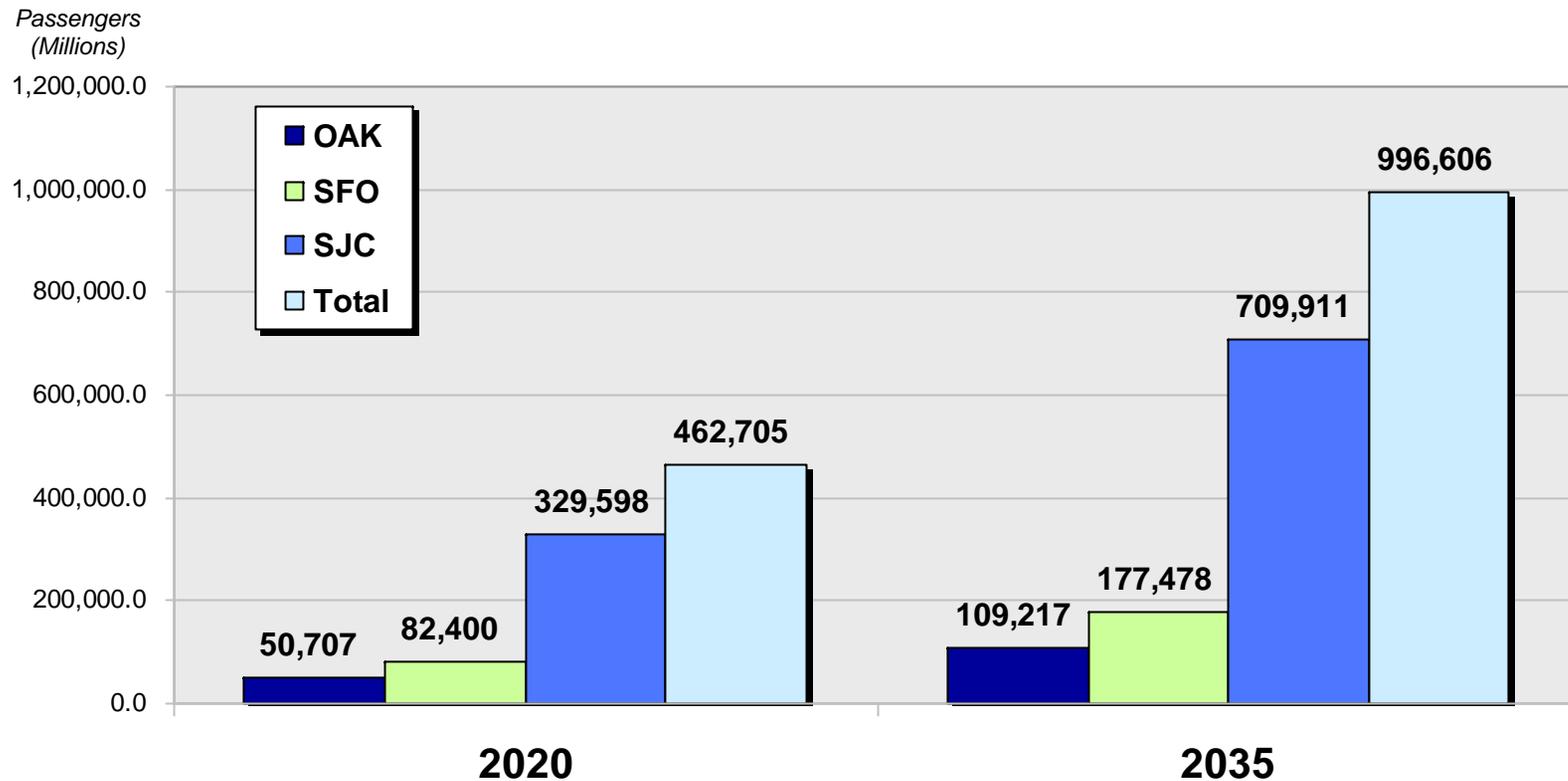
Nonstop Services (November 2009)			
Market	Airline	Daily Departures	Daily Seats
Los Angeles	American Eagle	4	176
	United Express	3	150
San Francisco	United Express	6	180
Phoenix	US Airways Express	2	100
Denver	United Express	1	66
San Diego	Allegiant	*	
Las Vegas	Allegiant	*	
Total		16	672

- High Density Local Markets
- Airline Connecting Hubs
- (#) = Bay Area O&D Market Rank

\* Less than daily service, operated 2 times weekly with 150-seat aircraft (300 weekly seats).

# In 2035, Expanded Monterey Air Services Could Recapture Nearly 1M Passengers from Bay Area Airports, Primarily from SJC

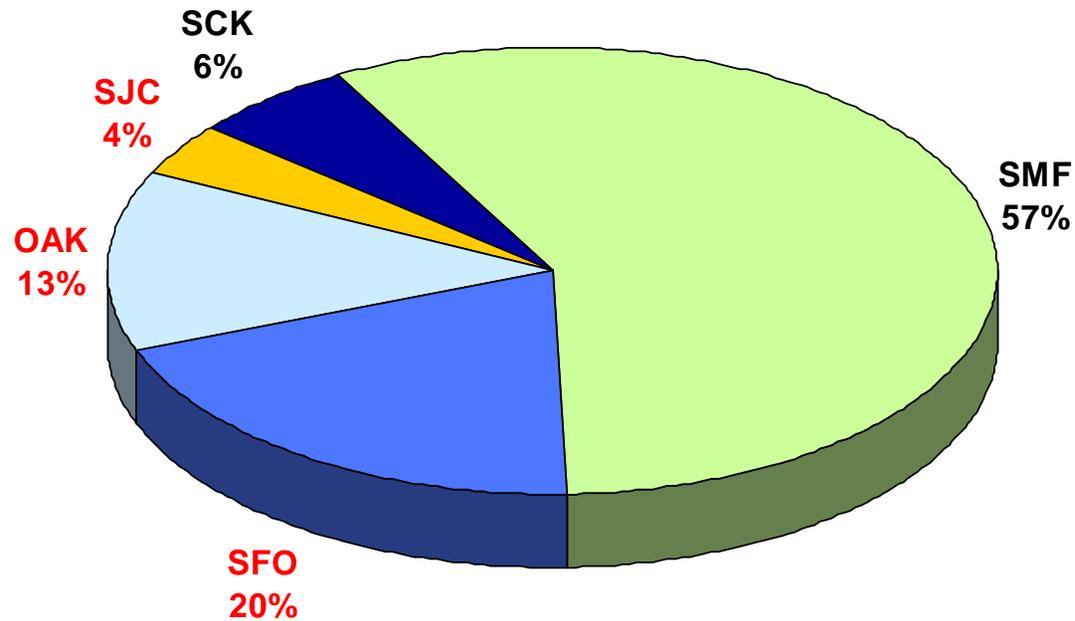
Estimated Monterey Passenger Recapture from the Bay Area Airports  
2020 and 2035



**71% of the Passenger Diversion Would be from SJC**

# Approximately 37% of Stockton's Catchment Area Passengers Use a Bay Area Airport

Airports Used by Passengers Originating in the Stockton Catchment Area



**2007 Stockton Catchment Area O&D Passengers = 890,000**

# Two Scenarios for Air Service Development at Stockton

## Stockton's Existing Nonstop Services

Nonstop Services (November 2009)			
Market	Airline	Weekly Departures	Weekly Seats
Las Vegas	Allegiant	3 *	450

\* Increasing to 4-5 weekly departures in February 2010.

### ◆ Medium Growth Scenario

- Allegiant adds additional weekly frequencies to LAS in 2020
- Allegiant adds a second destination in 2011

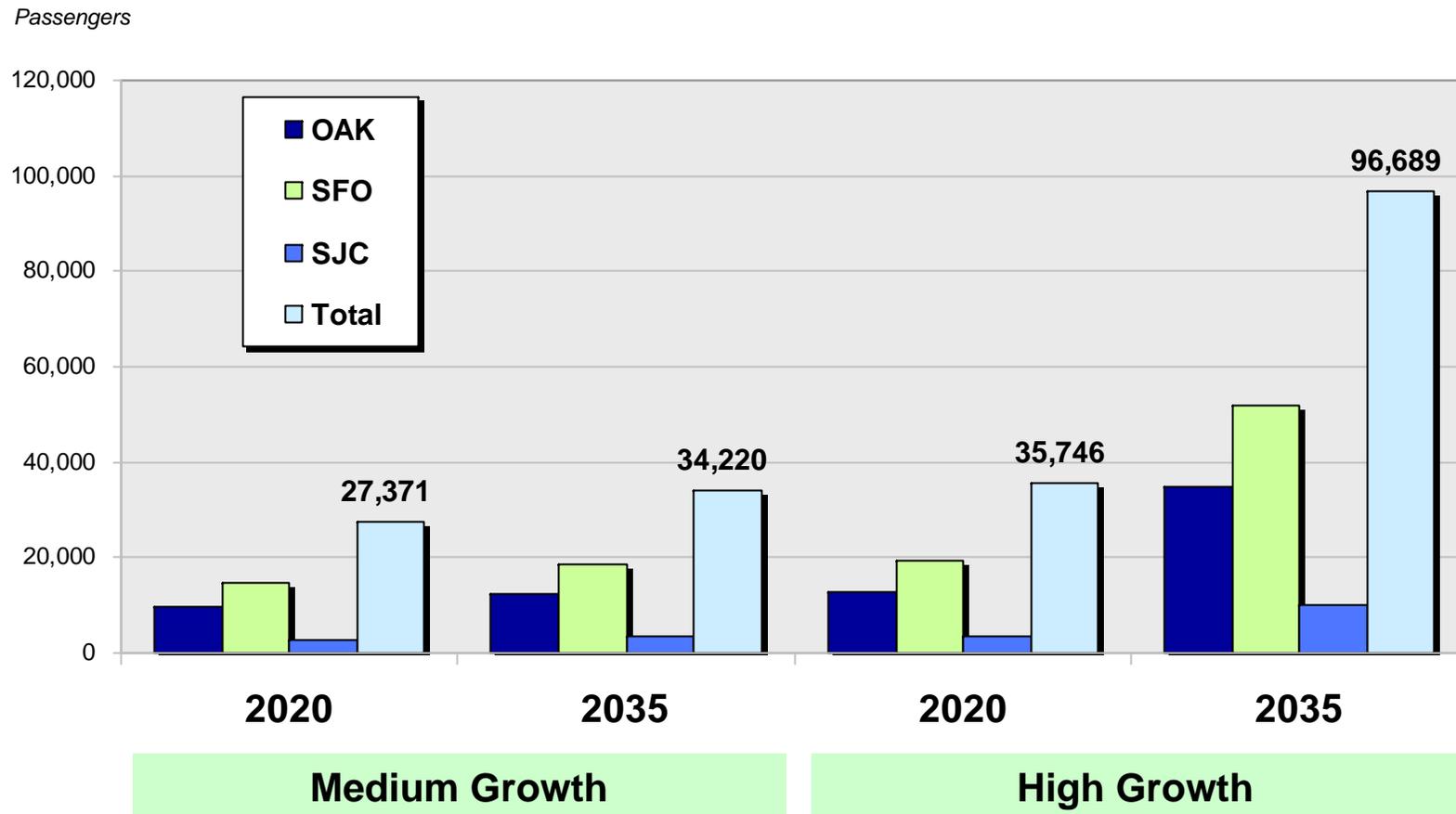
### ◆ High Growth Scenario

- In addition to Medium Growth assumptions, Stockton attracts services to additional destinations by Allegiant and/or mainline regional carriers



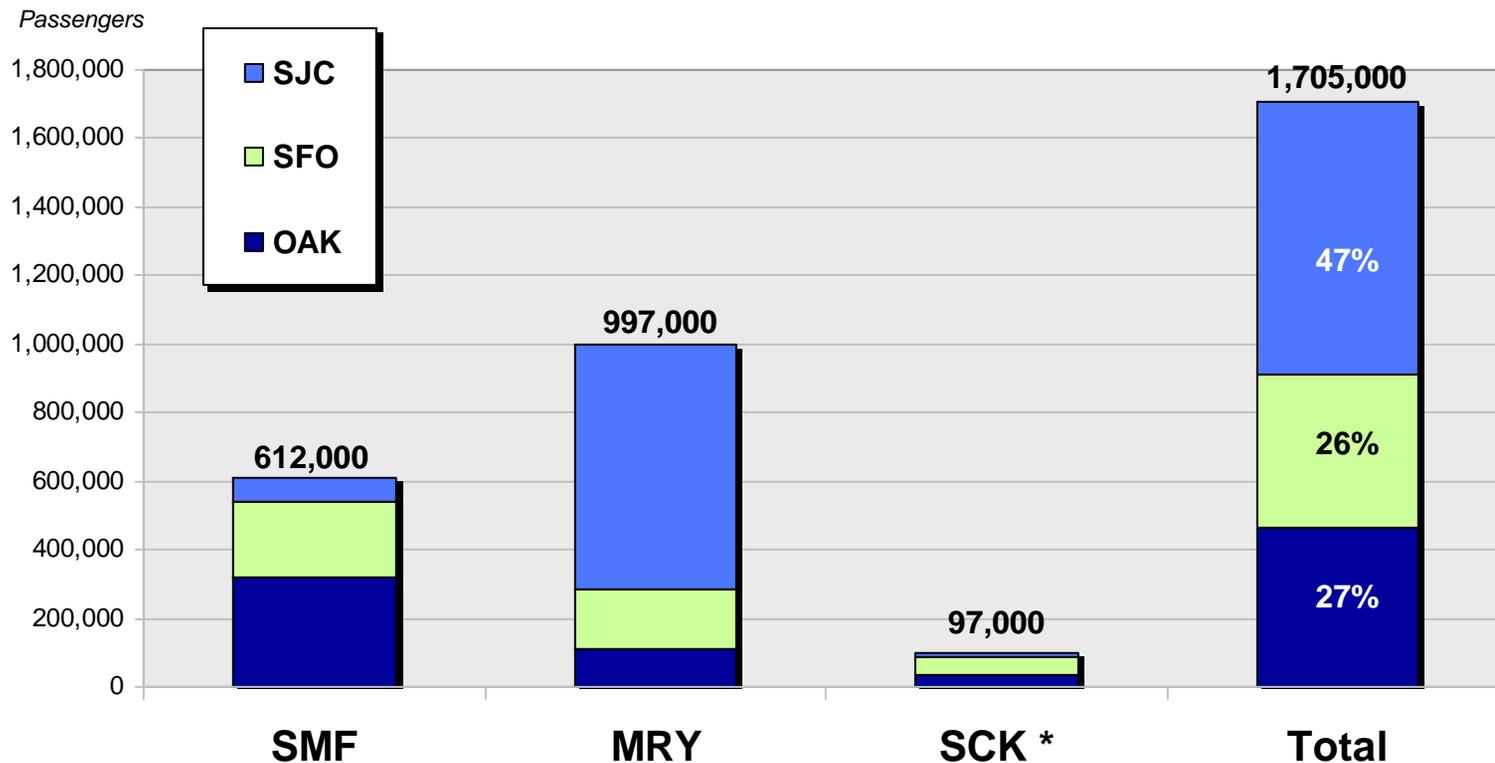
# Since More than Half of Stockton's Traffic Leaks to Sacramento, Stockton's Recapture Would Only Reduce Bay Area Passenger Demand by 34,000 to 97,000 in 2035

Estimated Stockton Passenger Recapture from the Bay Area Airports  
2020 and 2035



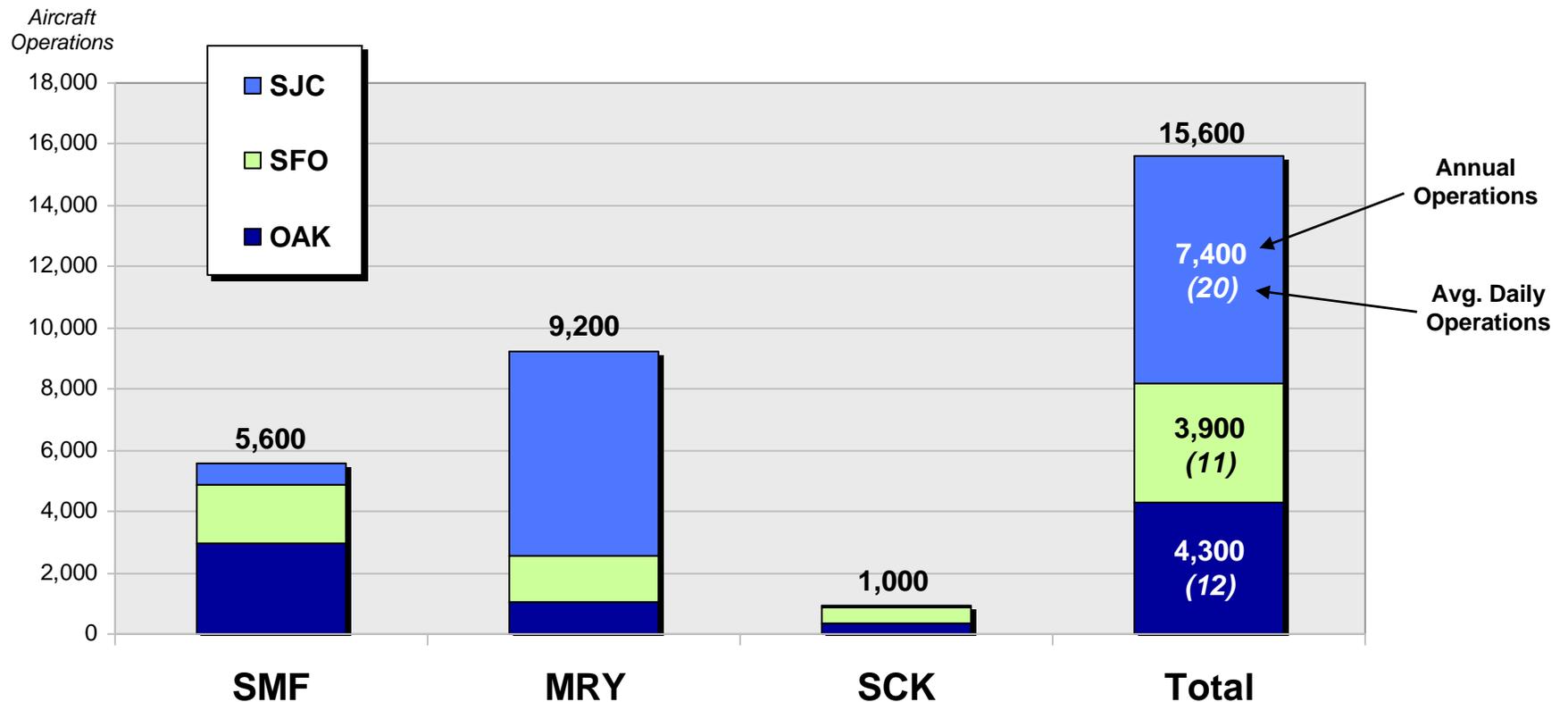
# Total Passenger Recapture by the Three External Airports Could Reduce Demand at the Bay Area Airports by 1.7M Passengers

Reduction in Bay Area Airport Passengers as a Result of Passenger Recapture by the External Airports  
2035



# Aircraft Demand Could be Reduced by 15,600 Annual Operations

Reduction in Bay Area Airport Operations as a Result of Passenger Recapture by the External Airports  
2035



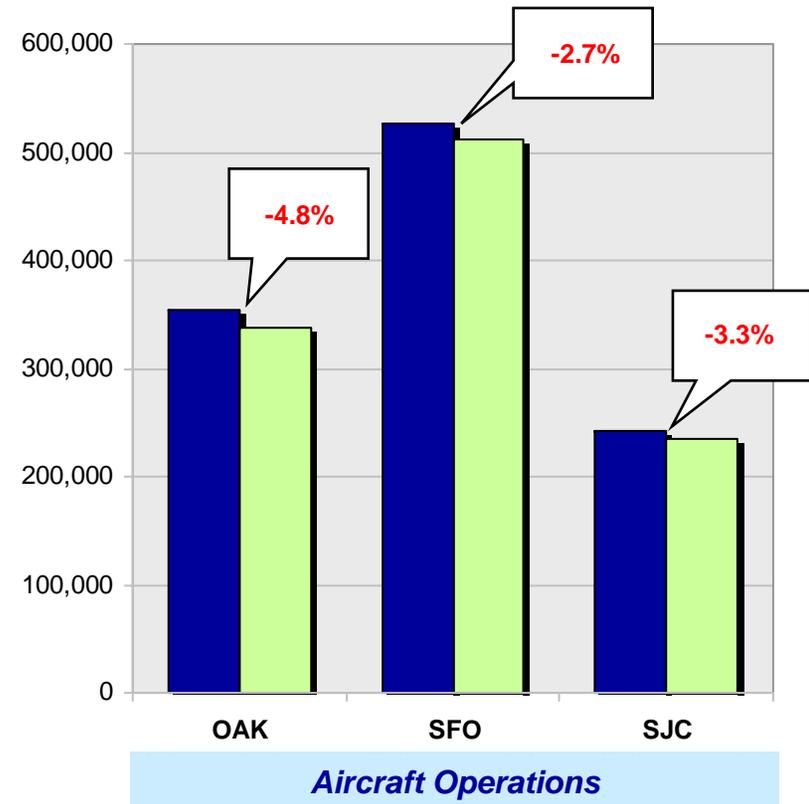
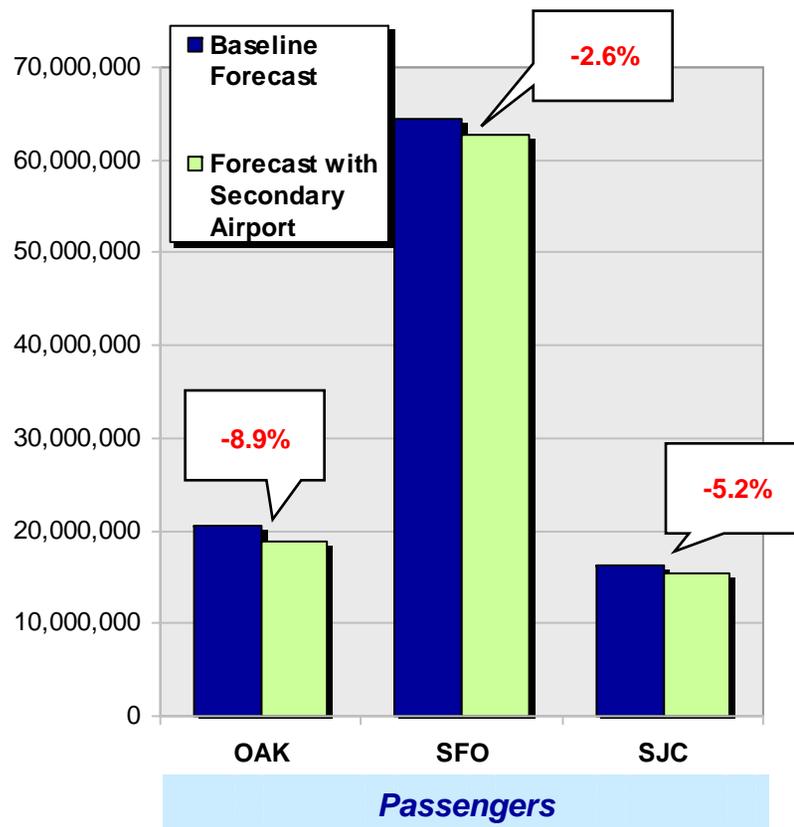
# In 2035, Combined Recapture by the External and Internal Airports Could Reduce Passenger Demand at the Primary Airports by 4.3M and Aircraft Operations by 39,000

Reduction in Aviation Demand at the Primary Bay Area Airports  
as a Result of Air Passenger Service Expansion at the Secondary Airports  
*2020 and 2035*

Secondary Ariports	2020		2035	
	Passengers	Aircraft Operations	Passengers	Aircraft Operations
Internal	963,000	9,500	2,638,000	23,800
External	821,000	8,200	1,705,000	15,600
Total	1,784,000	17,700	4,343,000	39,400

# Total Passenger Recapture by the Three External Airports Could Reduce Total Activity at the Bay Area Airports by 3-4%, and SFO Activity by Less than 3%

Reduction in Bay Area Airport Activity as a Result of Passenger Recapture by the External Airports  
2035



## Next Steps for Alternative Airports Scenario

- ◆ **Review Recapture Estimates with Individual Airports**
- ◆ **Assess Impact of Combined Internal and External Airport Alternatives on Bay Area Airports:**
  - Runway Capacity and Delays
  - Air Quality Emissions and Green House Gases
  - Noise Emissions