JACOBS CONSULTANCY

Regional Aviation Demand and Alternative Scenarios

Regional Aviation Strategic Plan

Airport Advisory Committee

RASP Subcommittee

December 10, 2009

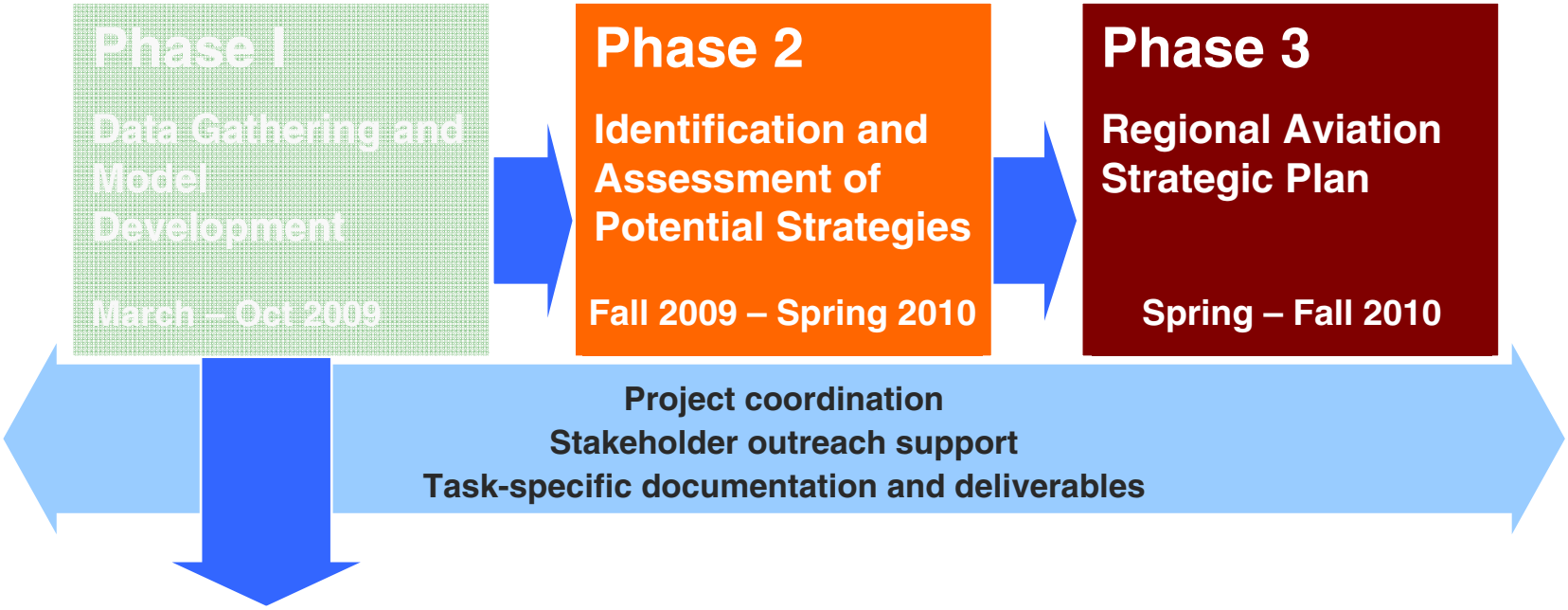
Revised Draft

Meeting Agenda

1. **Project Overview and Schedule**
2. **Regional Aviation Demand**
   - Economic background
   - Historic air service trends
   - Factors moving forward
3. **Base Case Scenario**
4. **Alternative Scenarios**

RASP Project Overview

Three Phase Work Plan Culminating in mid-2010

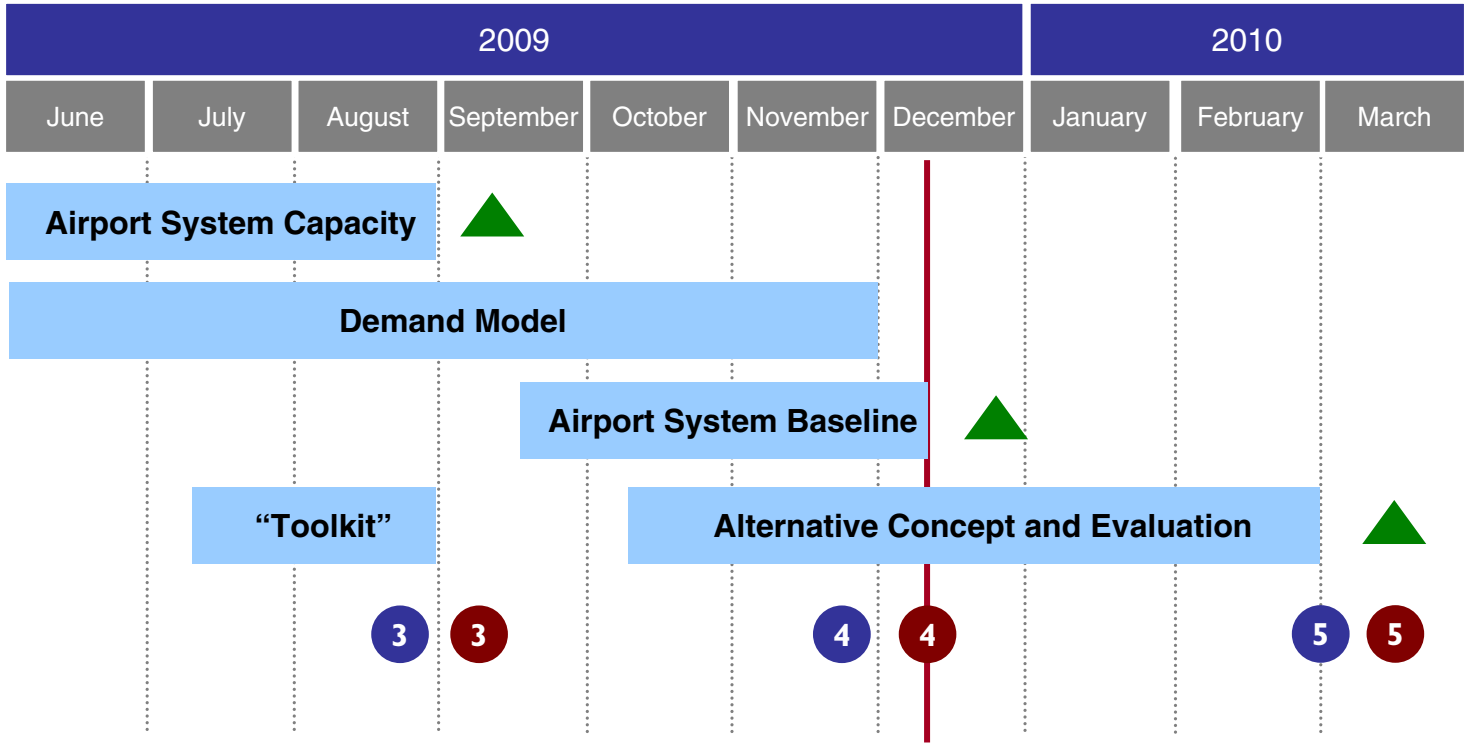


Key Phase I deliverables (www.sdrasp.com)

- Regional Aviation Demand Forecasts (Subcommittee meeting #1)
- Inventory and Strategic Assessment (Subcommittee meeting #2)
- Demand/capacity analyses (Subcommittee meeting #3)
- System optimization strategies (Subcommittee meeting #3)

Near-term Schedule and Work Plan

Project Is On Schedule



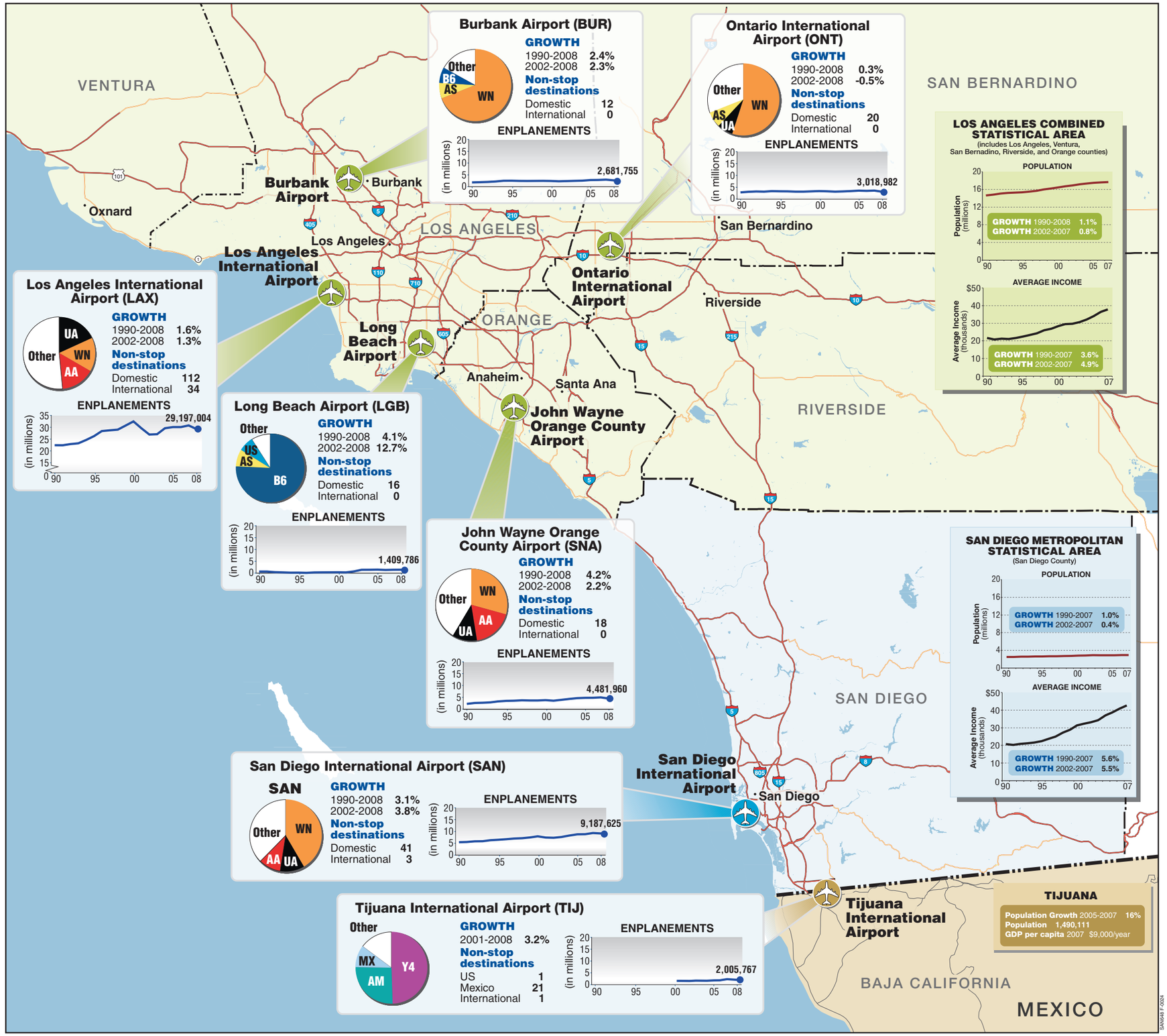
SCHEDULE MILESTONES

- Ad Hoc Meeting
- RASP Subcommittee Meeting
- Task Deliverable

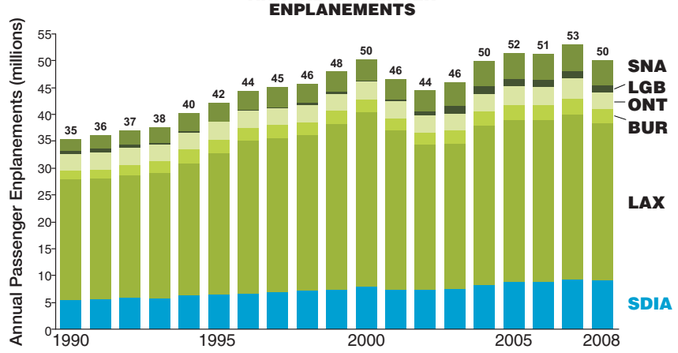
Summary of Regional Demand Findings

Demand Findings Influence the Alternative Scenarios Considered

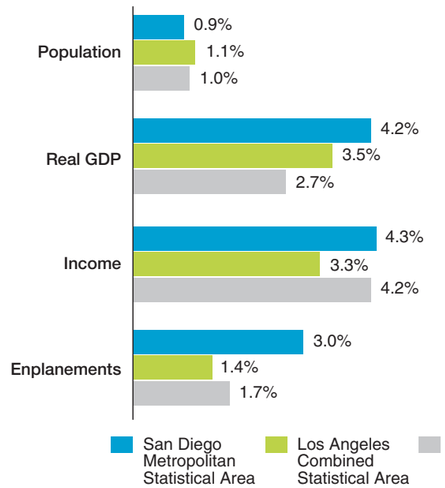
- San Diego has experienced above average growth compared to Los Angeles, Mexico, and the U.S. as a whole
- Except for LAX, aviation growth in Southern California is significantly influenced by low cost carriers' business model
- Although SDIA has good domestic air service at competitive airfares, some San Diego County residents choose to use airports in the LA region and Mexico
- RASP strategies and alternatives should be considered in the context of the larger region surrounding San Diego County
- Both Tijuana International Airport (TIJ) and California High Speed Rail (HSR) are potential contributors to meeting future demand
  - Impact of TIJ dependent on U.S.-Mexican economic conditions; convenience of the border-crossing process; and fare differentials between U.S. and Mexican airlines
  - Impact of HSR depends on integration with the greater transportation network



ANNUAL PASSENGER ENPLANEMENTS



GROWTH (1998-2007)



Airlines:

AA	American Air	WN	Southwest
AM	Aeromexico	UA	United Air
AS	Alaska Air	US	US Airways
B6	JetBlue	Y4	Volaris
MX	Mexicana		

Notes: Airports with fewer than 1 million annual enplanements are not listed.
GROWTH = Compound Annual Growth Rate.
US airports airline market share is based on seat capacity in 2008.
Tijuana International Airport airline market share is based on seat capacity 2009 to date.
All airports nonstop destinations are from Quarter 1 2009.
Income figures are real (1999) dollars.

Sources: Jacobs Consultancy, based on T100, census, Bureau of Economic Analysis, Cross Border Terminal Study, August 2009.

AVIATION TRAFFIC AND DEMOGRAPHICS
SOUTHERN CALIFORNIA/BAJA CALIFORNIA REGION

San Diego County Regional Airport Authority

JACOBS CONSULTANCY

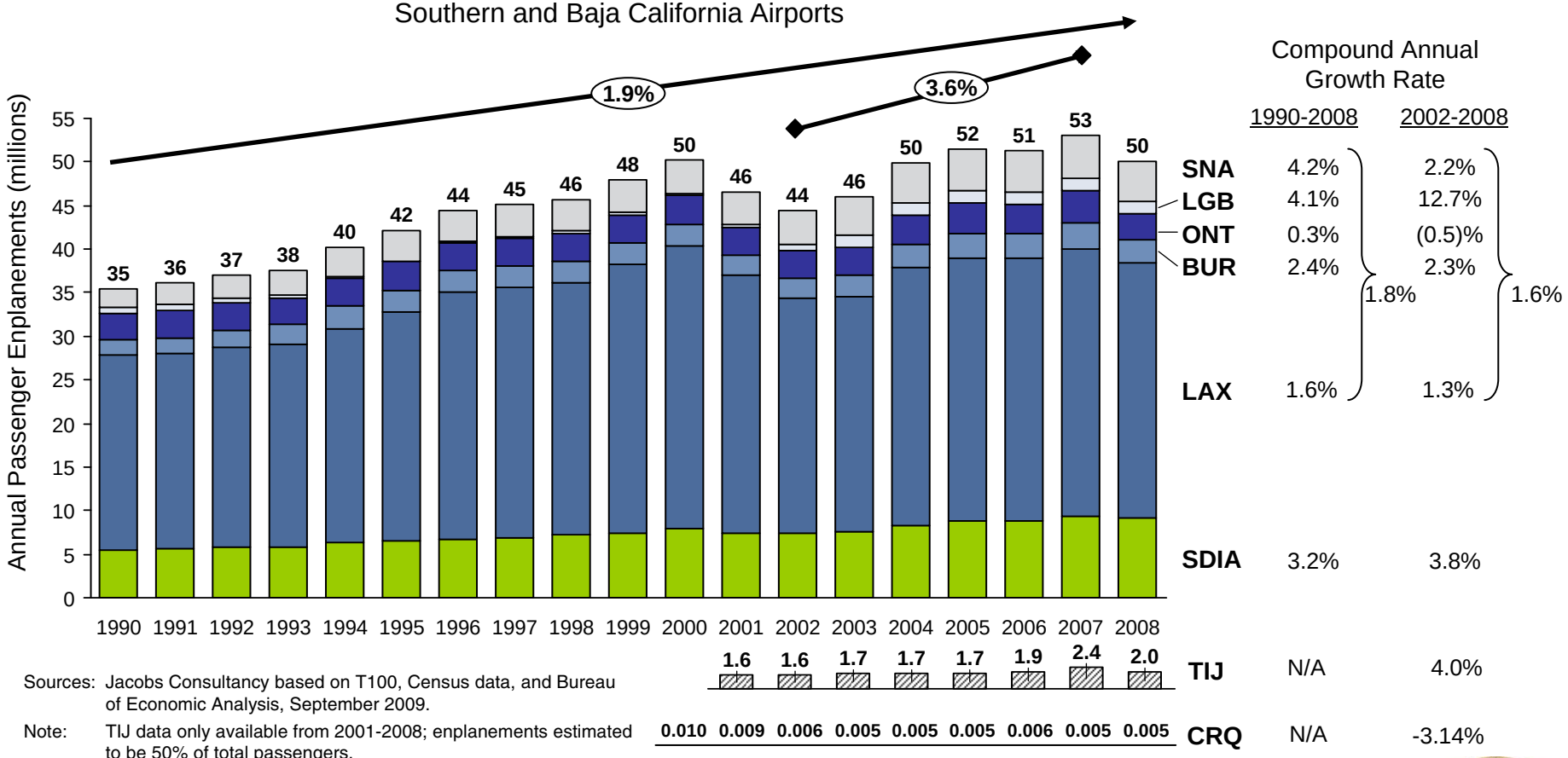
Historic Growth in Aviation Demand

SDIA Is One of the Faster Growing Airports in the Region

LEGEND
SNA = John Wayne/Orange County
LGB = Long Beach
ONT = Ontario International
BUR = Burbank Airport
LAX = Los Angeles International
TIJ = Tijuana-Rodriguez International
CRQ = McClellan-Palomar

Annual Passenger Enplanements

Southern and Baja California Airports



Compound Annual Growth Rate

	1990-2008	2002-2008
SNA	4.2%	2.2%
LGB	4.1%	12.7%
ONT	0.3%	(0.5)%
BUR	2.4%	2.3%
	1.8%	1.6%
LAX	1.6%	1.3%
SDIA	3.2%	3.8%
TIJ	N/A	4.0%
CRQ	N/A	-3.14%

Sources: Jacobs Consultancy based on T100, Census data, and Bureau of Economic Analysis, September 2009.

Note: TIJ data only available from 2001-2008; enplanements estimated to be 50% of total passengers.

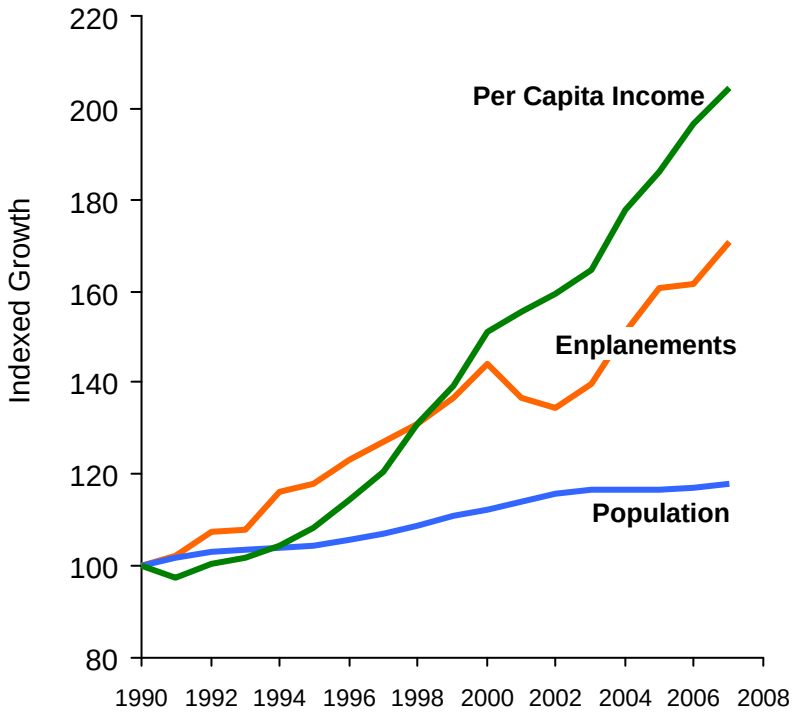
Three letter airport codes defined on previous slide.

Regional Aviation Demand Characteristics

Growth in Per Capita Income Has Driven Enplanements Above Population Growth

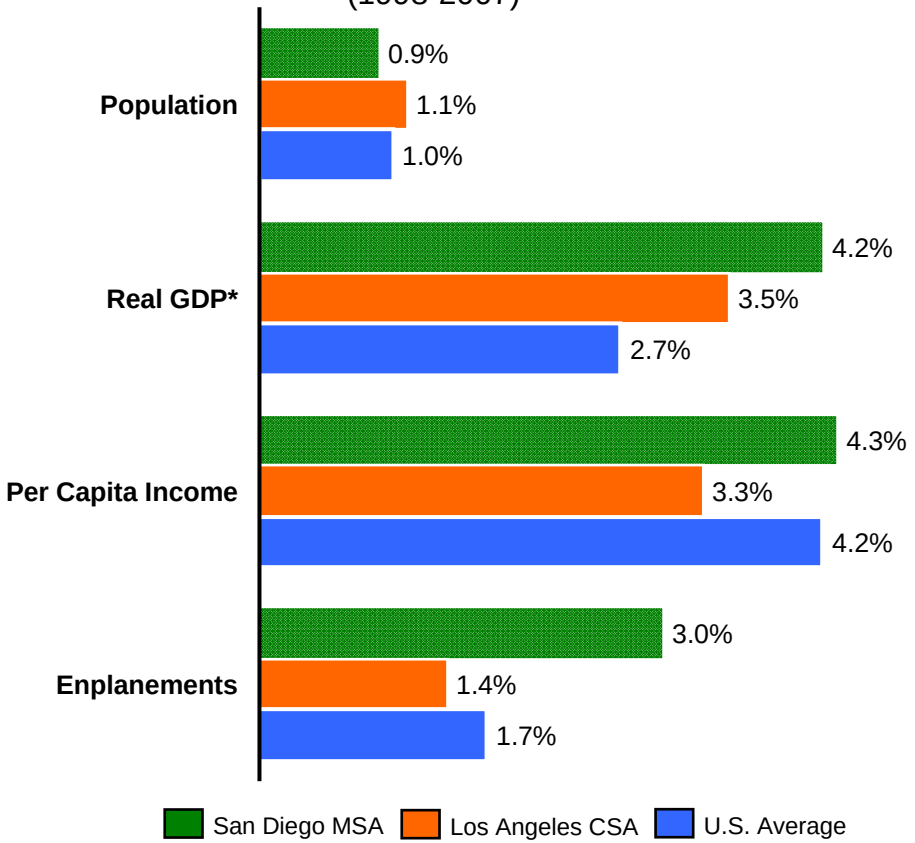
Indexed Growth

San Diego Metropolitan Statistical Area
(indexed to 1990)



Compound Annual Growth Rate

(1998-2007)

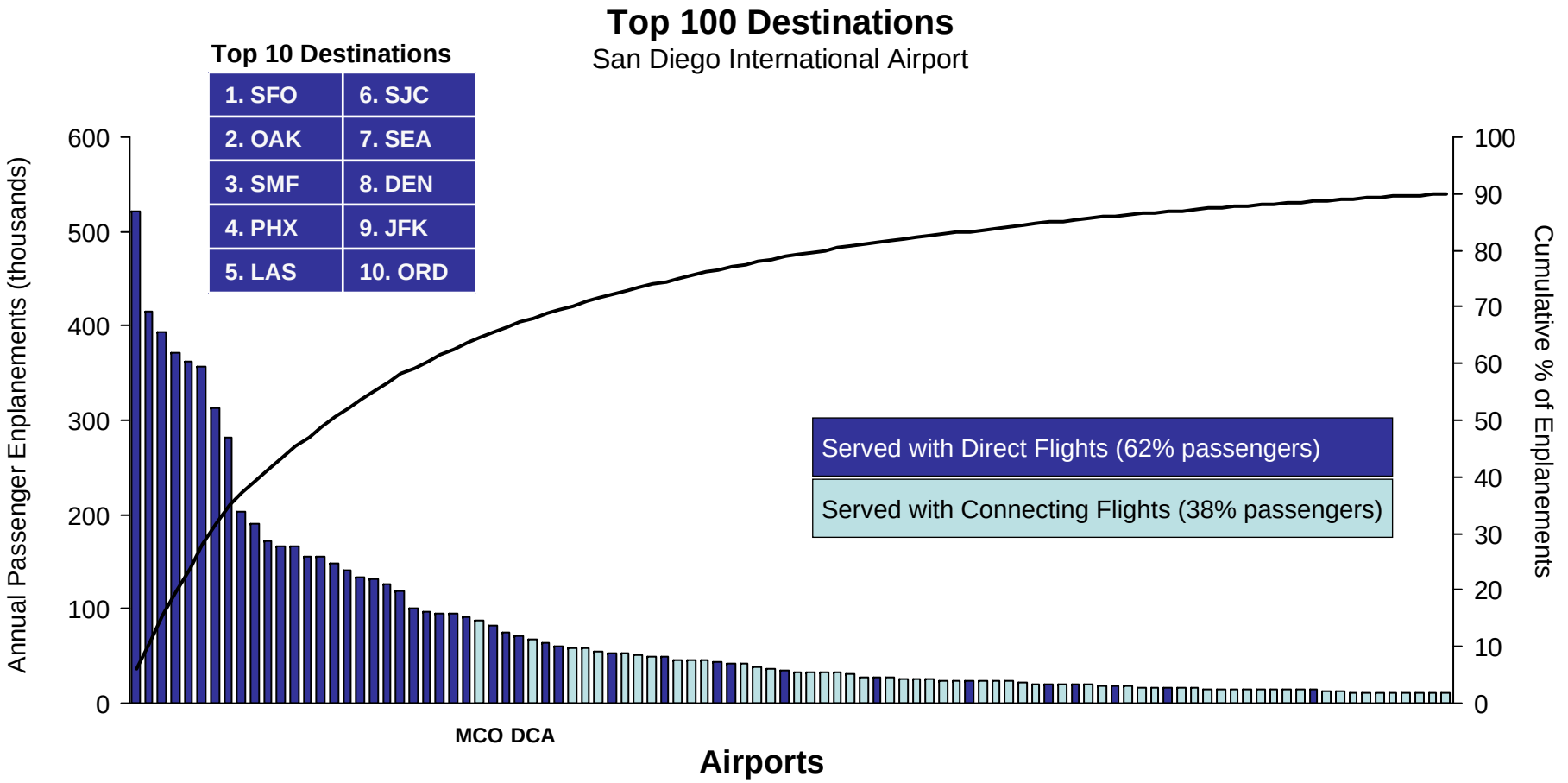


Sources: Jacobs Consultancy based on Landrum & Brown analysis, FAA *Terminal Area Forecast*, Bureau of Economic Analysis, September 2009.

Notes: Real GDP CAGR is for 2001-2006; San Diego MSA aligns with San Diego County boundaries.

Air Service Background

Ten Destinations (4 in CA) Account For More Than 40% of SDIA Outbound Traffic

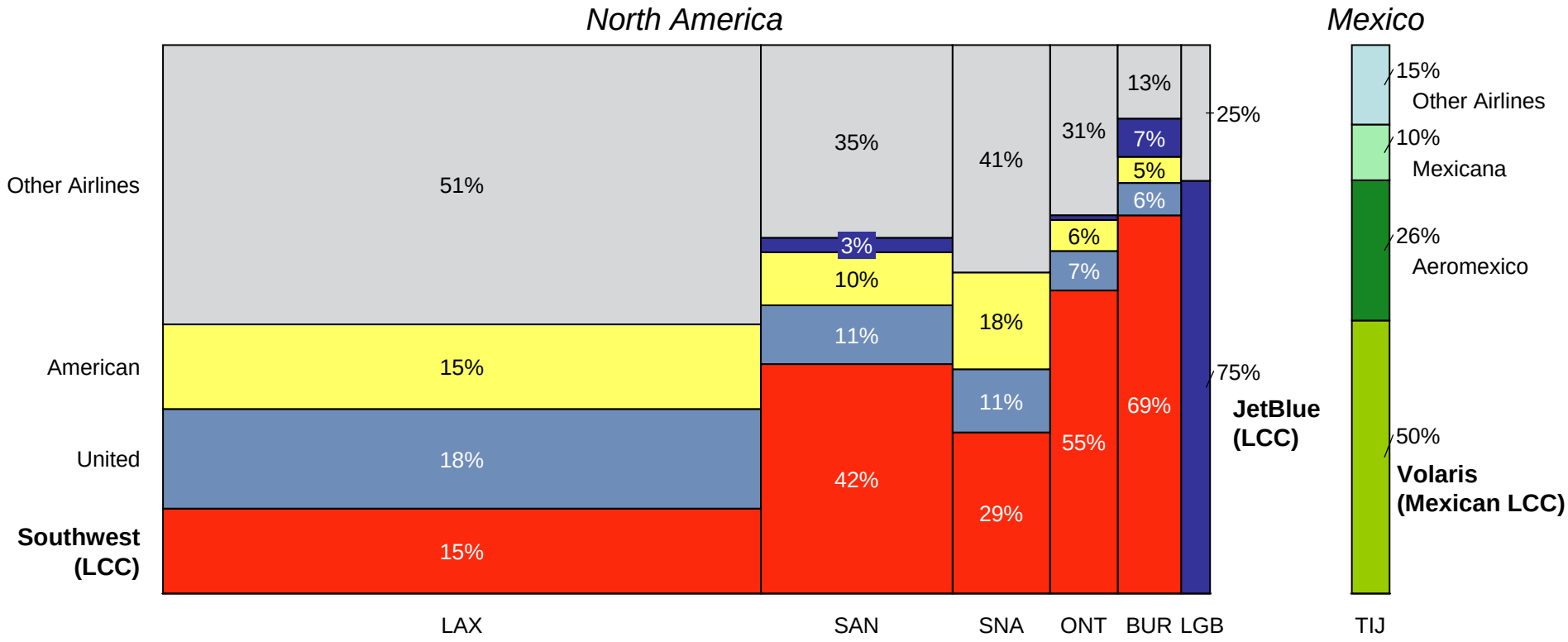


Source: Jacobs Consultancy based on US DOT DB1B, September 2009.

Impact of Low Cost Carriers

Low Cost Carriers Dominate the Smaller Airports in the Region, including TIJ

Airline Market Shares
(Based on Seat Capacity in 2008)

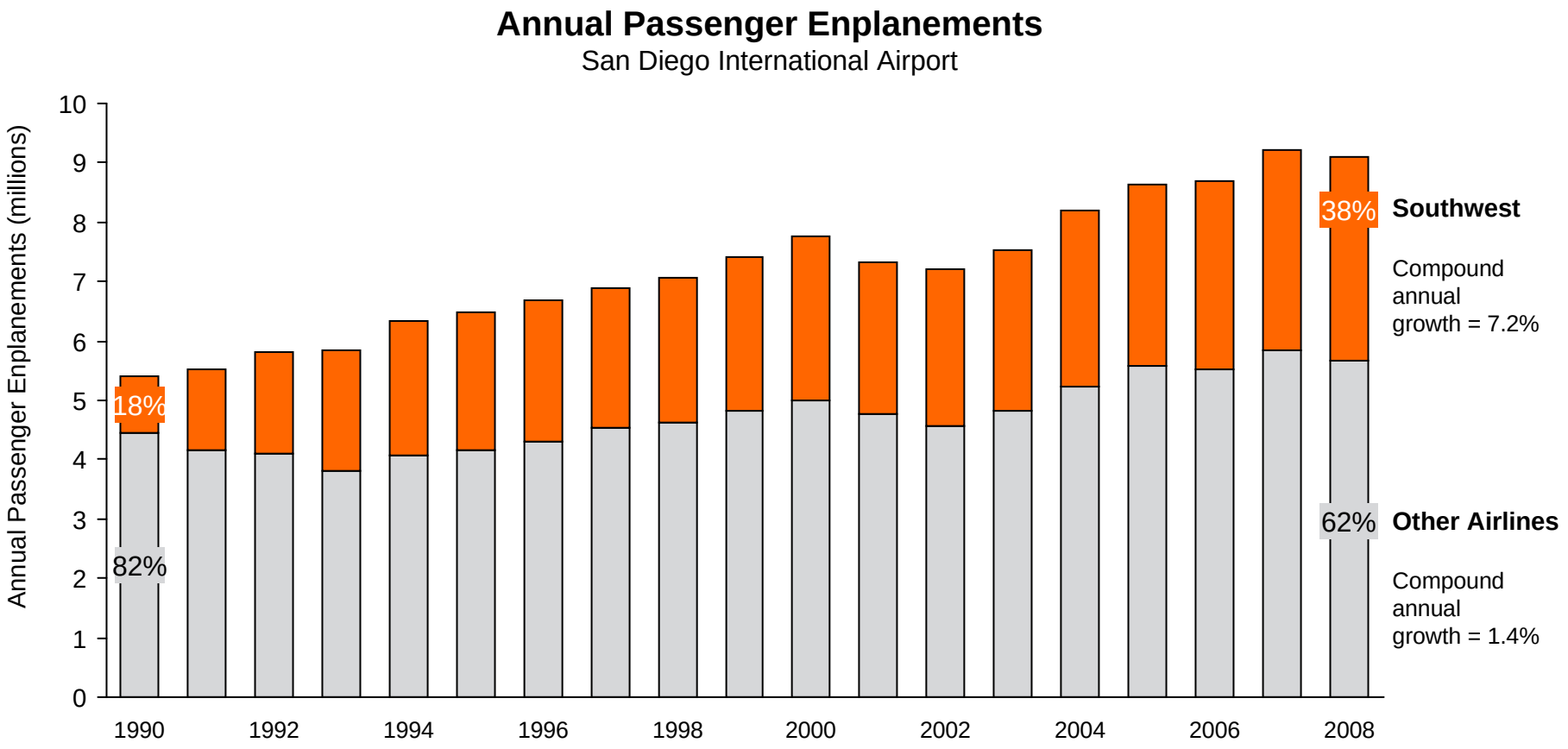


Sources: Jacobs Consultancy based on US DOT DB1B, OAG data, September 2009.

Notes: Column width proportional to total annual seat capacity from that airport; includes international demand.
LCC = Low Cost Carrier

Impact of Low Cost Carriers

Southwest Airlines Has Driven the Majority of Passenger Growth at SDIA Since 1990



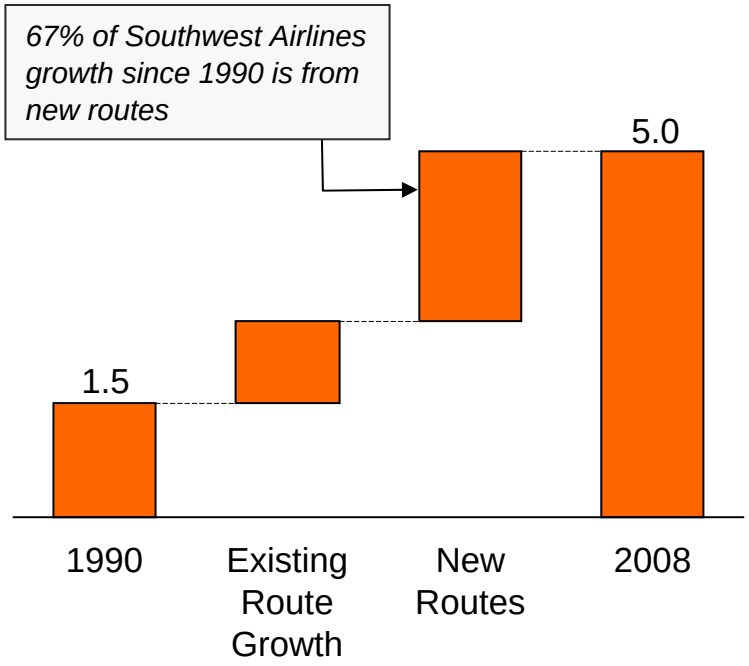
Source: Jacobs Consultancy based on T100, September 2009.

Note: Enplanements from T100 are slightly different from figures provided by SDCRAA.

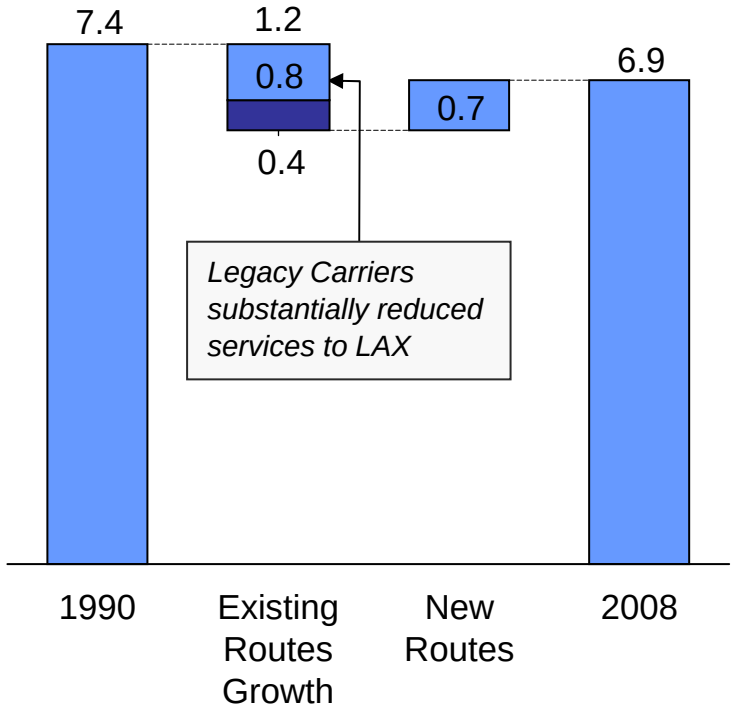
Impact of Low Cost Carriers

At SDIA, Southwest Airlines Has Grown Primarily by Adding New Routes

Seats Offered
Southwest Airlines (Millions)
San Diego International Airport



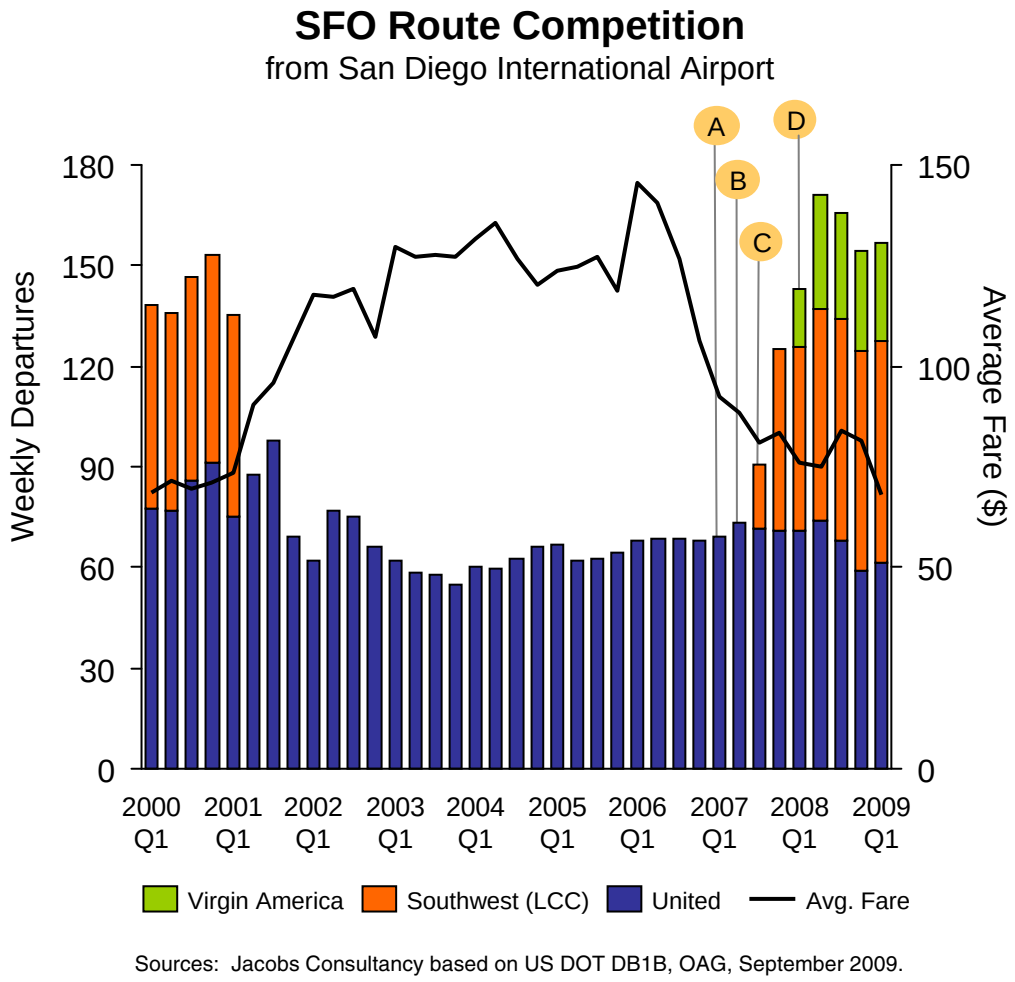
Seats Offered
All Other Airlines (Millions)
San Diego International Airport



Source: Jacobs Consultancy, based on US DOT DB1B, September 2009.

Impact of Low Cost Carriers

Southwest Competes Vigorously with Other Airlines



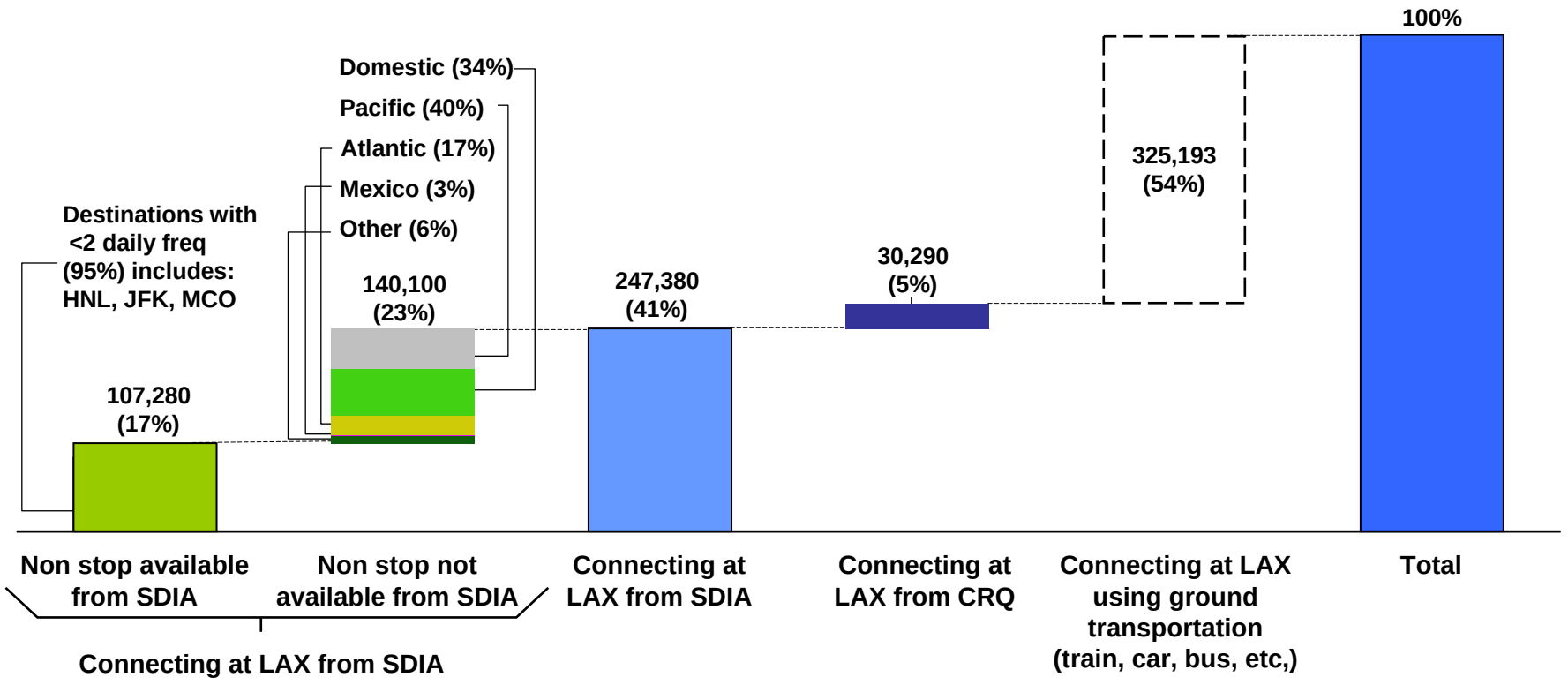
Sources: Jacobs Consultancy based on US DOT DB1B, OAG, September 2009.

- **A** Jan 07 – Virgin America announces SFO hub and plans to enter SAN-SFO market
- **B** May 07 – Southwest announces plans to reestablish service at SFO, and plans to reintroduce SAN-SFO
- **C** Aug 07 – Southwest launches SAN-SFO service at an introductory one-way fare of $39
- **D** Feb 08 – Virgin America launches SAN-SFO service

Air Service Background – Los Angeles International Airport

Many San Diego County Residents Choose to Connect at LAX for Frequency or Destination

San Diego County Passengers' Destinations Connecting at LAX

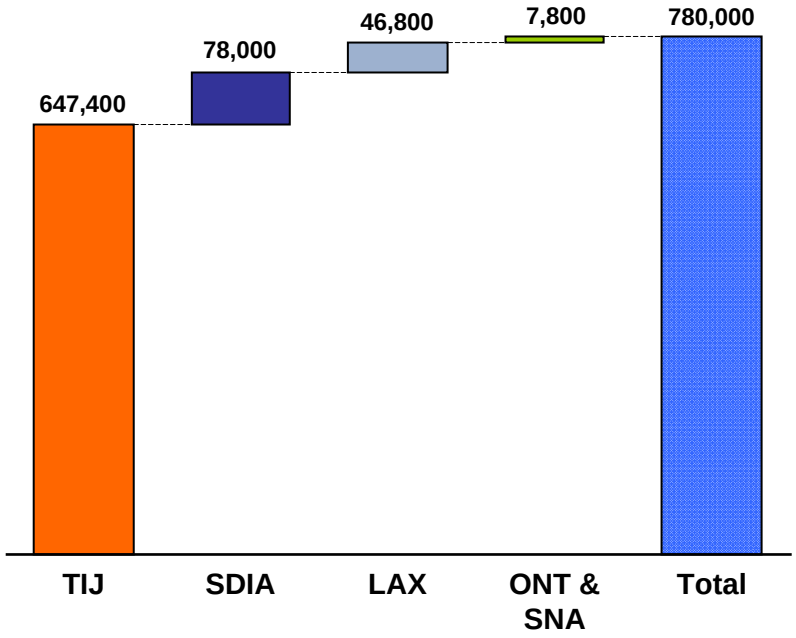


Sources: Jacobs Consultancy, based on US DOT DB1B, LAX Passenger Survey 2006, September 2009.

Air Service Background – Tijuana Rodriguez International Airport

The Majority of San Diego County Residents Traveling to Mexico Use Tijuana International

Originating Airports for San Diego County Residents Traveling to Mexico (2006)



Number of Destinations and Daily Departures to Mexico (2009)

Airport	Mexican Destinations	Daily Departures
TIJ	**21**	**50**
SDIA	1	1-2
LAX	15	31
ONT & SNA	1	1

TIJ also includes non-stop service to Tokyo

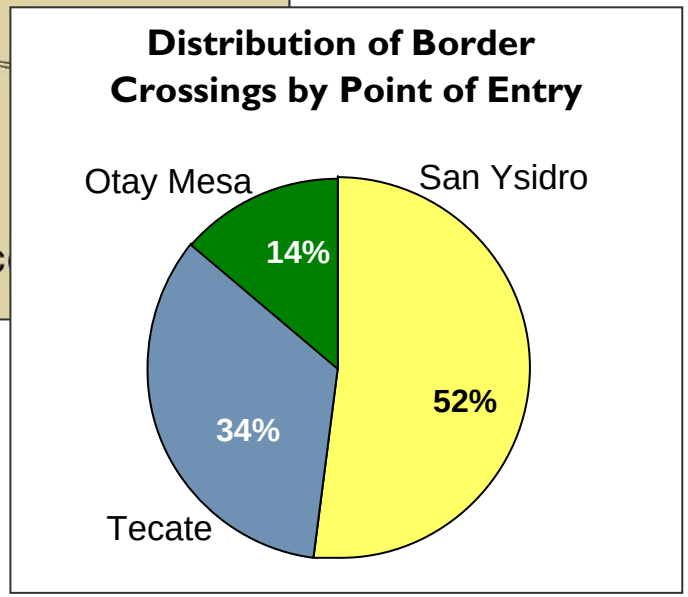
Sources: Jacobs Consultancy, based on U.S. DOT DB1B, Cross Border Terminal Study, OAG data, September 2009.

Notes: Air traffic to Mexico from SDIA in 2006 was approximately 78,000 passengers representing 10% of Market Information Data Transfer (MIDT) departure bookings.

Cross Border Terminal Study estimates 475,000 (±75,000) TIJ enplanements are San Diego County residents.

Air Service Background – Tijuana Rodriguez International Airport

Significant Ground Access Time Is Associated with Using Tijuana International Airport



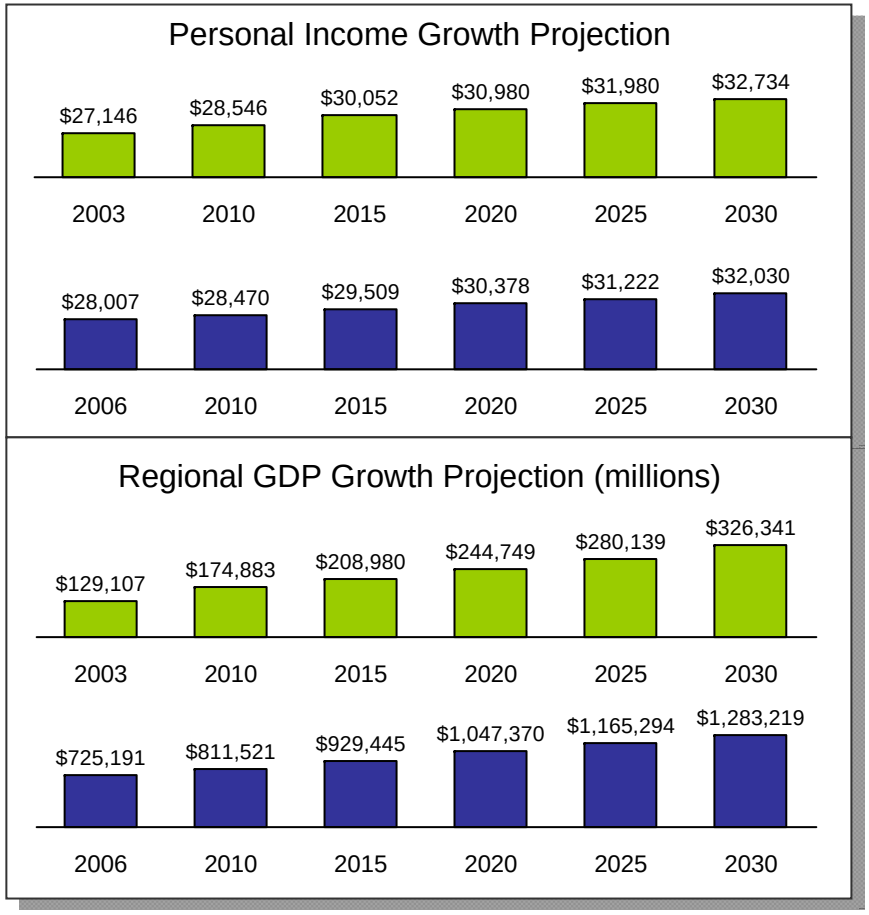
Average Daily Border Crossing Times			
	Into Mexico	Into the United States	
		Vehicle	Pedestrian
San Ysidro	**< 5 min**	**50 – 75 min**	**5 – 10 min**
Otay Mesa	**< 5 min**	**20 – 30 min**	**0 – 20 min**
Tecate	**< 5 min**	**5 – 40 min**	**Closed**

Sources: Jacobs Consultancy, U.S. Custom and Border Protection, U.S. DOT Data, September 2009.

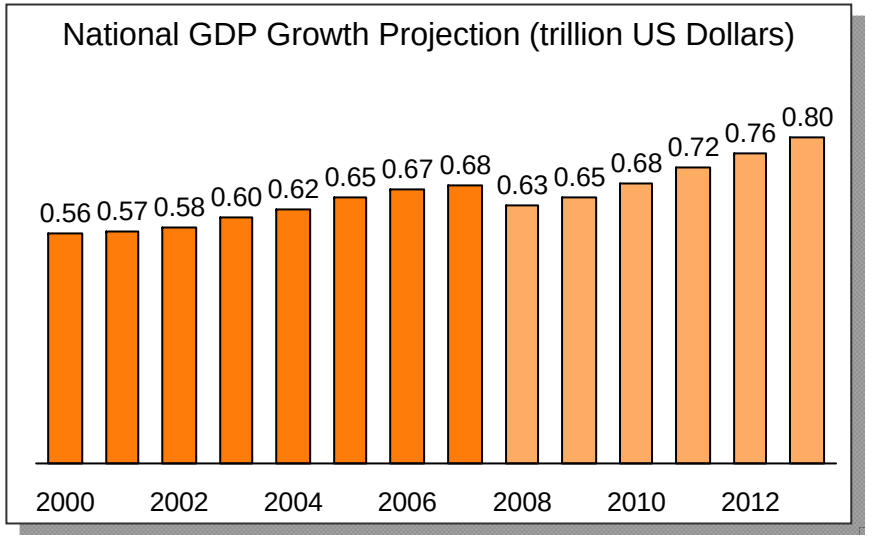
Demographic and Economic Outlook

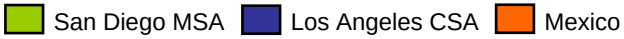
Continued Economic Growth Projected for San Diego, Los Angeles and Mexico

San Diego / Los Angeles



Mexico





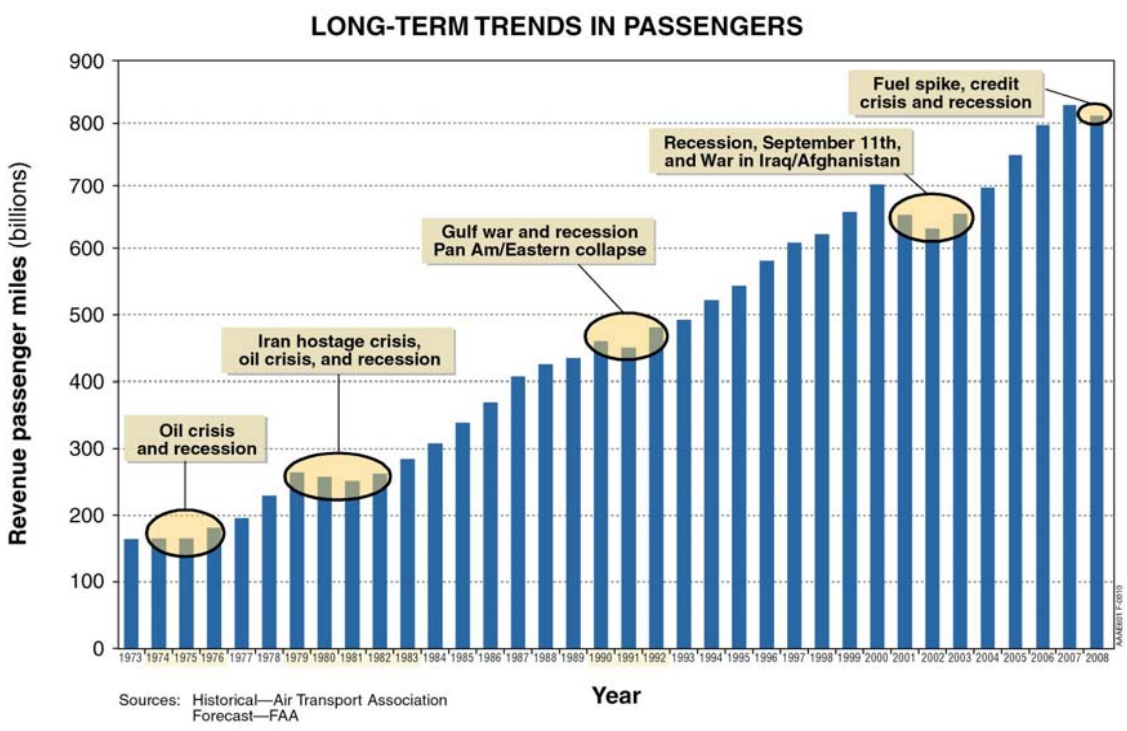
Sources: Jacobs Consultancy, based on SANDAG RTP, SCAG RTP, September 2009.
Paramus Post, based on Global Insight, January 2009.

Note: All figures are in real (1999) dollars.

Commercial Airline Industry Trends and Outlook

Demand for Air Travel in the U.S. Correlates Strongly with Fluctuations in the Economy

- **Recessionary periods and external "shocks" cause periodic downturns in aviation growth**
- **In the post-financial crisis environment, carriers have reduced capacity (10-15%) in an effort to keep fares high; notwithstanding cuts, the industry is projected to lose billions for 2009**
- **While 2009 third quarter financials improved, passenger growth and yields remain weak; a rebound is projected to be modest at best**



Air Cargo / Corporate GA Outlook and Local Considerations

Growth Outlooks Differ for GA and Cargo; Each Prefers to Operate From SDIA

- General Aviation
  - All forecast show declines in piston aircraft but increases in turbojets and helicopters
  - Most corporate GA demand is associated with downtown San Diego; SDIA is the ideal geographic location
  - Recreational GA dispersed throughout County airports; does not negatively impact capacity
  - Forecast flight training exceeds Gillespie Field airfield capacity
- Air Cargo
  - Air cargo volumes down 20% since 2008; recovery likely to be slow
  - Majority of cargo at SDIA is accommodated on integrated / express carriers (90%) and originates or is destined for downtown San Diego; SDIA is the ideal geographic location
  - Integrated carriers employ a vast distribution networks requiring a centralized airport location
  - No County airports north of SDIA can accommodate air cargo aircraft; carriers unwilling to operate from facilities south of SDIA since increases delivery times to the demand base

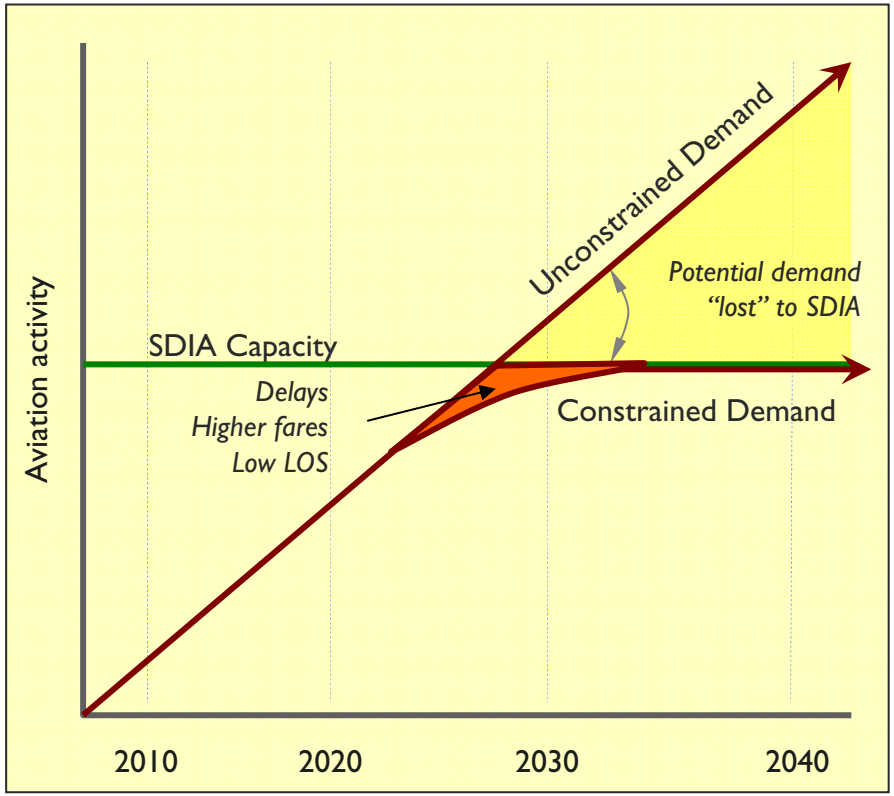
Previous Estimates of Regional Aviation Capacity

Aviation Capacity Will Be an Issue in San Diego During the Planning Horizon

Study	Year	Key Capacity Findings
Destination Lindbergh	2008	SDIA's airfield will reach capacity between 2020 and 2025 likely resulting in airline market responses, including schedule changes, up-gauging to slightly larger aircraft, etc.
SAN PLAN: Southern California Airport Capacity	2008	LAX will reach its policy constrained limit of 78M annual passengers as early as 2015 Orange County (SNA) and Long Beach (LGB) have reached legal constraints Burbank (BUR) may reach its capacity as early as 2025 SDIA could experience severe congestion by 2020
FAA: Capacity Needs in the National Airspace System	2007	SDIA and the San Diego metropolitan area would need additional aviation capacity by 2025 FAA's determination included NextGen improvements and planned improvements by the authority at that time FAA recommended the type of multi-modal planning that is integral to RASP
San Diego International Airport Aviation Activity Forecasts	2004	SDIA runway capacity will constrain growth between 2015 - 2022 SDIA runway congestion will not allow further growth 2021 - 2030 Without new investments, SDIA may experience a cumulative loss of between 5 – 30M passengers over the forecasted period

Definition of the Base Case

RASP Baseline Will Consider the Outcomes of Capacity Constraints

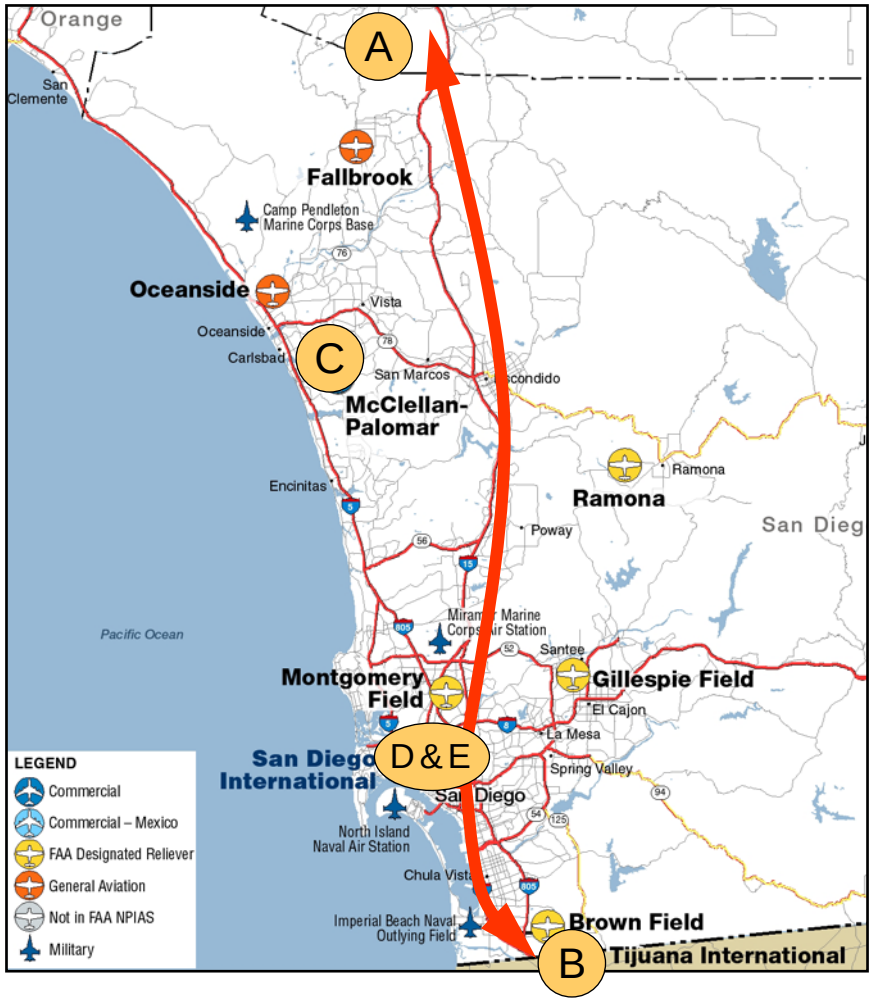


- RASP Base Case – "Do nothing" alternative upon which benefits and impacts of other scenarios will be compared against
- Base Case will consider:
  - "Approved" and funded improvements
  - Reasonably foreseeable market-driven reactions to address demand
  - Capacity constraints at LA region airports
- Base Case *will not* include construction of major new facilities, policy options, or artificial constraints on demand

Definition of the Base Case

SDIA Capacity Constraints Will Result in Multiple "Reactions" Between 2025 and 2030

- **A** **Accommodation of some San Diego demand at LA region airports**
- **B** **Accommodation of some regional demand at Tijuana International Airport**
- **C** **Increased, but limited commercial service at McClellan-Palomar; continued turboprop service (around 30 seats) due to runway length**
- **D** **Federally-mandated slot controls at SDIA result in higher fares, some up-gauging, and higher load factors**
- **E** **Some international wide-body flights at SDIA due to LAX capacity constraints and increasing drive times to LA region**



Definition of the Base Case

Current SDIA Policies and Planned Near-term Improvements Will Be Incorporated

- Continued accommodation of existing user groups (commercial, cargo, corporate GA), and prohibition on departures at night
- Airfield constraint "caps" activity near 2030 or around 28M passengers
- T-2 West 10 gate addition in 2013
- Destination Lindbergh recommendations for "Opening Day"
  - North Side Intermodal Transit Center (ITC) sized to accommodate 400-600K annual transit passengers
  - Linkage to trolleys (Blue and Orange lines), Coaster/Amtrak, and MTS
  - Consolidated rental car facility
  - Dedicated on-airport roadway for busses connecting ITC and south side terminals
  - 2015 transit ridership goals 6% per SANDAG assumptions
- Surface improvements per SANDAG's RTP – "Revenue Constrained Scenario"

AIRPORT AND OPERATOR

- San Diego County Regional Airport Authority
- City of Oceanside
- City of San Diego
- County of San Diego
- Military
- Grupo Aeroportuario del Pacifico

PROPOSED IMPROVEMENT

- Future road improvement
- Addition to existing road
- New road construction
- New toll road construction
- Rail improvement

- County boundary
- International boundary

N

2 0 2 4

Graphic scale in miles

REGIONAL TRANSPORTATION PLAN
2010 PROPOSED IMPROVEMENTS

Regional Aviation Strategic Plan
San Diego County Regional Airport Authority
November 2009

Note: All improvements reflect the Revenue Constrained Scenario.

Source: SANDAG, *2030 San Diego Regional Transportation Plan*, November 2007.

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AIRPORT AND OPERATOR

- San Diego County Regional Airport Authority
- City of Oceanside
- City of San Diego
- County of San Diego
- Military
- Grupo Aeroportuario del Pacifico
- Los Angeles area airports (multiple operators)

PROPOSED IMPROVEMENT

- Future road improvement
- Addition to existing road
- New road construction
- New toll road construction
- Interchange improvement
- Rail improvement

- County boundary
- International boundary

N

4.5 0 4.5 9

Graphic scale in miles

Note: All improvements within San Diego County reflect the Revenue Constrained Scenario.

Sources: SANDAG, *2030 San Diego Regional Transportation Plan*, November 2007, and Southern California Association of Governments, *2008 Regional Transportation Plan.*

REGIONAL TRANSPORTATION PLAN
2020 PROPOSED IMPROVEMENTS

Regional Aviation Strategic Plan
San Diego County Regional Airport Authority

November 2009

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AIRPORT AND OPERATOR

- San Diego County Regional Airport Authority
- City of Oceanside
- City of San Diego
- County of San Diego
- Military
- Grupo Aeroportuario del Pacifico
- Los Angeles area airports (multiple operators)

PROPOSED IMPROVEMENT

- Future road improvement
- Addition to existing road
- New road construction
- New toll road construction
- Interchange improvement
- Proposed high speed rail corridor
- County boundary
- International boundary

N

4.5 0 4.5 9

Graphic scale in miles

Note: All improvements within San Diego County reflect the Revenue Constrained Scenario.

Sources: SANDAG, *2030 San Diego Regional Transportation Plan*, November 2007, and Southern California Association of Governments, *2008 Regional Transportation Plan.*

REGIONAL TRANSPORTATION PLAN
2030 PROPOSED IMPROVEMENTS

Regional Aviation Strategic Plan
San Diego County Regional Airport Authority

November 2009

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SAN061 F-0003

Many Complicated Factors Constrain Implementation of Alternatives

Forces Requiring Preparation of the RASP

- Aviation Activity Growth
- SDIA Capacity Limitations
- Need to Sustain Economic Growth

RASP Alternative Scenarios

Factors Working Against Regional Airport System Solutions

Regulatory Factors
- No single controlling entity to implement solutions
- No regulatory mechanisms to relocate activity segments

Political Factors
- NIMBY
- Pre-conceived notions regarding effectiveness (or lack) of solutions
- Consensus among stakeholders is difficult

Technical Factors
- Lack of appropriate existing facilities
- Regional demand characteristics
- Benefit-cost considerations of major capital improvements

Summary of Alternatives

Four Families of Scenarios for Subcommittee Consideration and Input

1. Commercial Passenger Optimization
2. Tijuana Enhancements
3. California High Speed Rail
4. Air Cargo and GA Optimization

Next Steps

1. **Compile and assess all input – then finalize Scenarios for detailed consideration and modeling (December - February 2010)**
2. **Prepare costs estimates, implementation phasing strategies, and other factors related to each Scenario (January 2010)**
3. **Utilize the regional demand model to assess impacts on regional demand and benefits (February 2010)**
4. **Prepare preliminary findings for March 2010 Subcommittee meeting**