



## Aviation Technical Advisory Committee (ATAC) Agenda

**Thursday, April 23rd, 2015**  
**10:00am- 12:00 Noon**  
**SCAG Main Office**  
**818 W. 7<sup>th</sup> Street, 12<sup>th</sup> Floor**  
**Los Angeles, CA 90017**

Webmeeting access is at this link: <http://scag.adobeconnect.com/atac/> . Telecom Dial-in: **800-832-0736** then enter the meeting room: **7334636** . You must use both the webmeeting and telecom to both see and hear the presentations.

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### **AGENDA**

1. Call meeting to order and Introductions (Mr. Gary Gosliga, ATAC Chair)	10 mins
2. Recap of the March 13-14, 2015 meeting at NAF El Centro (2016 RTP Aviation Development Plan Strategy and Urbanized/Constrained Airport Capacity Analysis) (Mr. Ryan N. Hall, SCAG Aviation Specialist and Mr. Gary Gosliga, ATAC Chair)	20 mins
3. Overall Regional Aviation Demand Forecast for the 2016 RTP (Mr. Ryan N. Hall, SCAG Aviation Specialist; Mr. Steve Greene, AECOM; and, Mr. Ken Currie, InterVISTAS) <b>ATTACHMENT</b>	30 mins
4. Update from the Caltrans Department of Aeronautics Headquarters (Mr. Gary Cathey, Caltrans Aeronautics)	15 mins
5. Aviation Ground Access Projects for the 2016 RTP/SCS (Mr. Steve Greene, AECOM)	20 mins
6. Updates on ATAC Standing Agenda Topics (Mr. Gary Gosliga, ATAC Chair) A. Southwest Chapter of the American Association of Airport Executives (SWAAAE) B. Transportation Research Board (TRB) C. Department of Homeland Security (DHS) Updates	10 mins
7. Discussion on Additional Topics/Comments/Announcements (Mr. Gary Gosliga, ATAC Chair and All)	10 mins
8. Set Next Meeting Date and <b>ADJOURN</b> (Mr. Gary Gosliga, ATAC Chair)	5 mins



# Item 3: Regional Aviation Demand Forecast

Presentation to the Aviation Technical  
Advisory Committee (ATAC)

April 23, 2015

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# Purpose of the Air Traffic Forecast

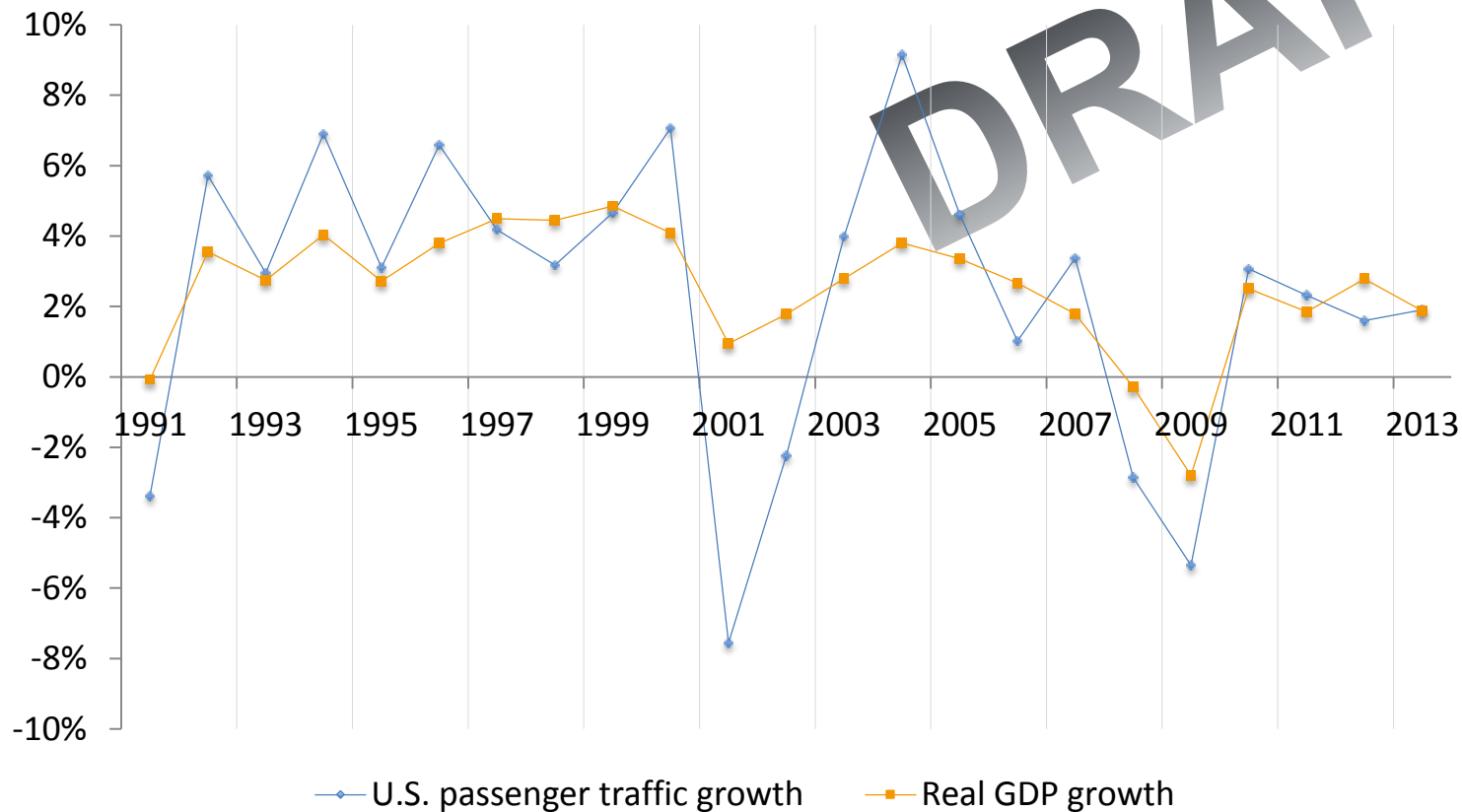
- Objective of the forecast study is to generate long-term forecasts for air passengers and cargo at the SCAG Region Airports
  - Forecasts are prepared through 2040
- The Air Traffic Forecast serves a number of purposes:
  - Indicate range of long-term passenger demand
  - Inform long-term strategic aviation policy
  - Inform long-term strategic regional transportation plans

# SCAG Region Airports Matter

- SCAG Region Airports combined handled **88 million annual passengers** in 2013
- In 2015, the SCAG Region Airports combined:
  - Serve **169** nonstop destinations daily in **37** countries
  - Have **1,200** daily departures
  - Have over **170,000** daily departing seats on **64** airlines

Sources: United States Department of Transportation T-100 Onboard Passenger and 298(c) Commuter Onboard databases, Innovata Schedules via Diio, March 2015.

# Strong relationship between demand for air travel and economic conditions



- For every 1% growth in GDP, air travel typically increases between 1% and 2%

Sources: United States Department of Transportation T-100 Onboard Passenger and 298(c) Commuter Onboard databases, Bureau of Economic Analysis.

# Every long-term traffic forecast therefore starts with a good understanding of the socio-economic trends...

- Air travel demand is derived from socio-economic interactions between origin and destination markets:
  - The size and wealth of the population quantifies the potential pool of travelers
  - Economic activity is a measure for business travel
  - Currency exchange rate with destination country affects leisure traveler's decision to travel

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...at both ends of the trip

- Since we make a distinction between:

- **Outbound passengers:** passengers having the SCAG Region Airports as the origin, or starting point, of their trip
- **Inbound passengers:** passengers having the SCAG Region Airports as the destination of their trip

...the socio-economic trends at *both ends of the trip* need to be analyzed

# Drivers for air travel demand depend on trip purpose

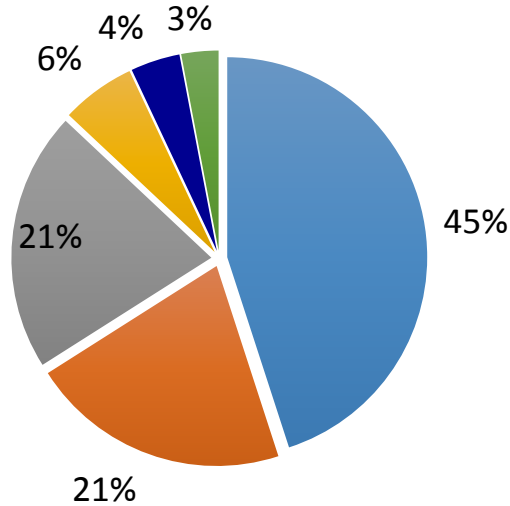
- Passengers can be divided according to the following reasons for undertaking air travel:
  - **Business travel:** driven by the level of business and trade activity, level of foreign investments, presence of large companies
  - **Leisure (inbound and outbound):** consumer spending, household income, currency exchange rates, fares
  - **Visiting friend and relatives:** driven by the presence of an ethnically diverse population, fares



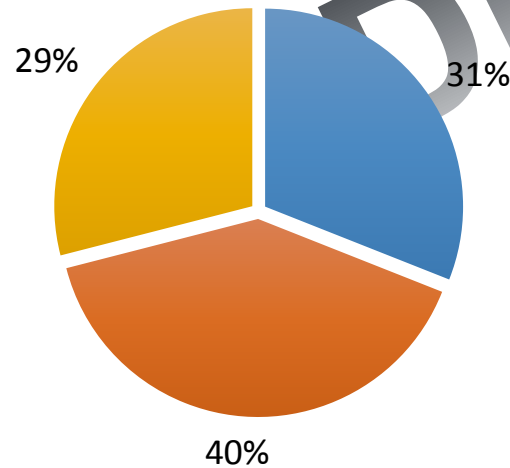
# Business and leisure are the key travel purposes

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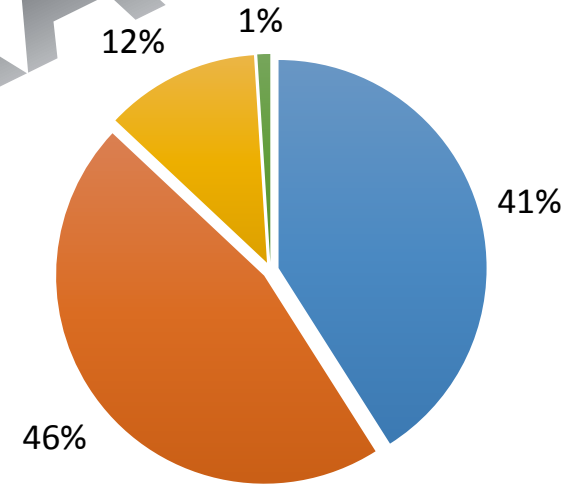
ONT Passenger Survey (2001)



LAX Passenger Survey (2011)



SNA Passenger Survey (2013)



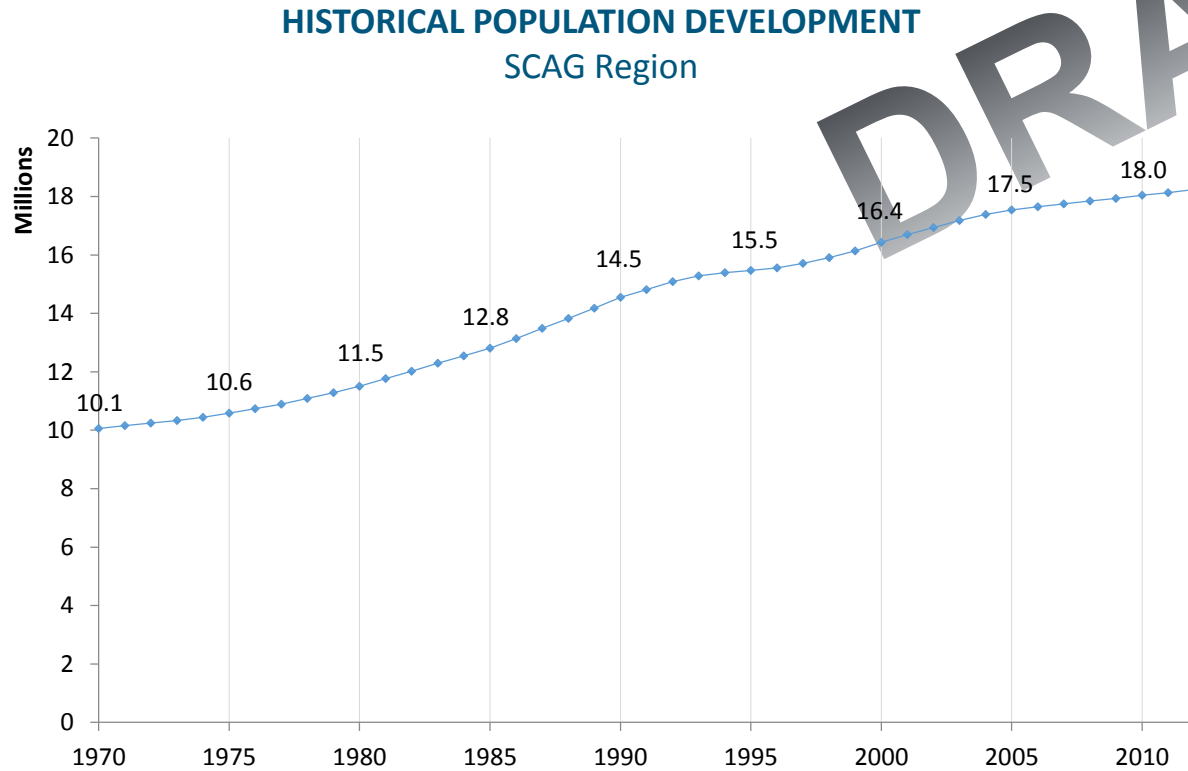
- Business or convention
- Visit friends and relatives
- Business and pleasure
- Vacation or pleasure trip
- Personal, family, or other
- School/Military

Sources: ONT, SNA, and LAX passenger surveys.

## Some definitions: the concept of O&D passengers

- Distinction is made between **Origin & Destination (O&D)** passengers and **onboard, or Enplaned/Deplaned** passengers
  - O&D passengers: relates to a passenger's *first and final destination*
  - Onboard passengers: relates to a passenger's *next destination*
- Total Onboard Pax = O&D Pax + Connecting Pax

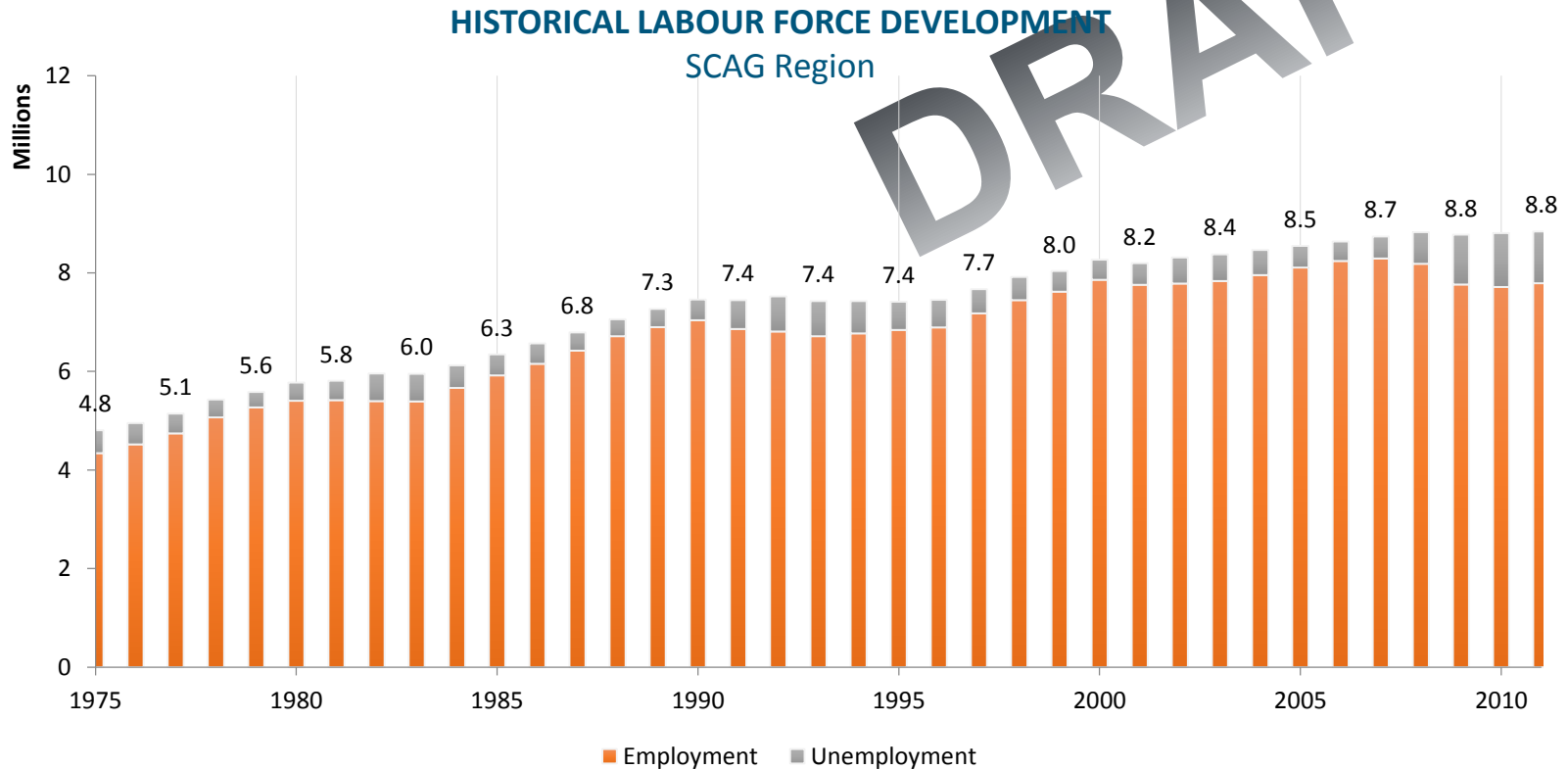
# Population in the SCAG region increased from 10.1 million in 1970 to 18.2 million in 2012



- Between 1970 and 2012, the population in the SCAG Region increased by a compound annual growth rate of 1.4%
- Average growth slowed down to 0.9% over the last decade between 2002 and 2012

Source: SCAG GIS/Data Services

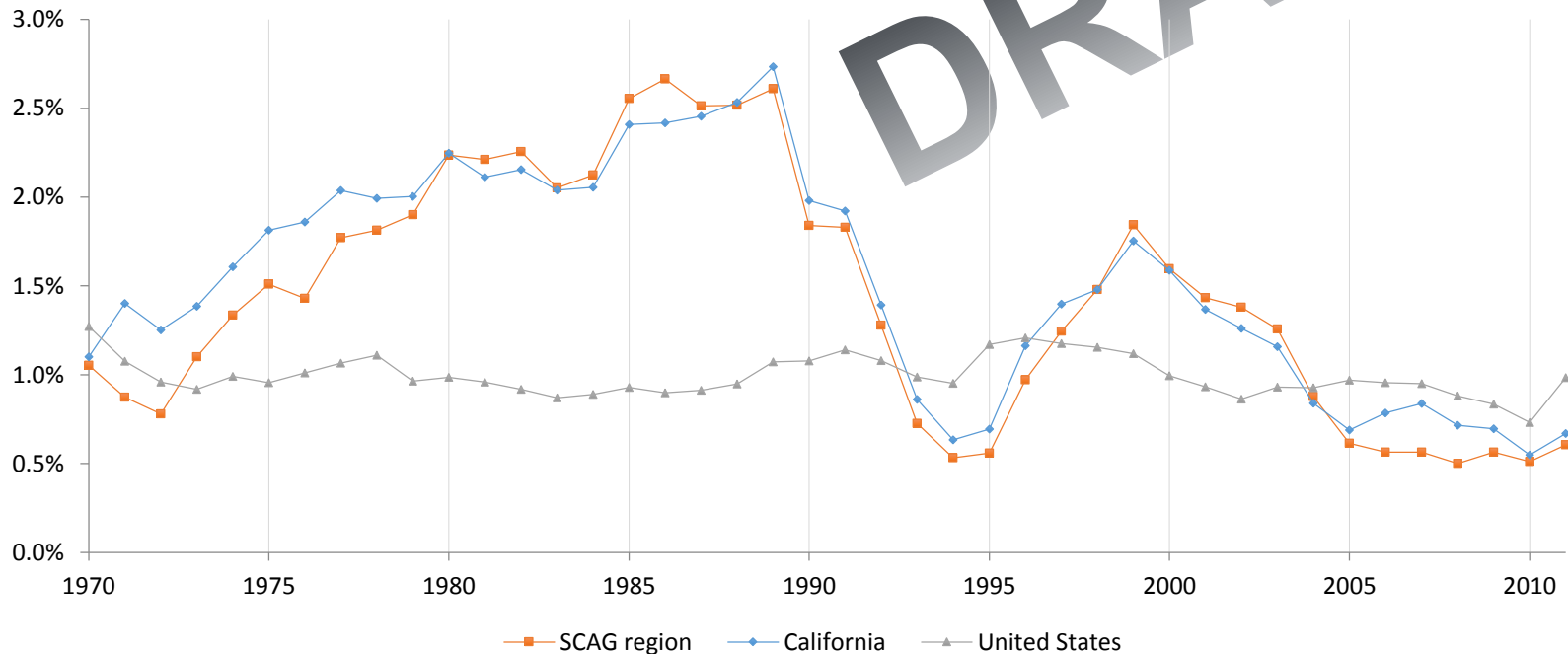
# The number of jobs increased at an annual rate of 1.7% between 1975 and 2011



- The number of jobs increased at a compound annual growth rate of 1.7% between 1975 and 2011
- However, employment growth has slowed down to 0.7% since 2002 and has actually decreased since the start of the financial crisis in 2007

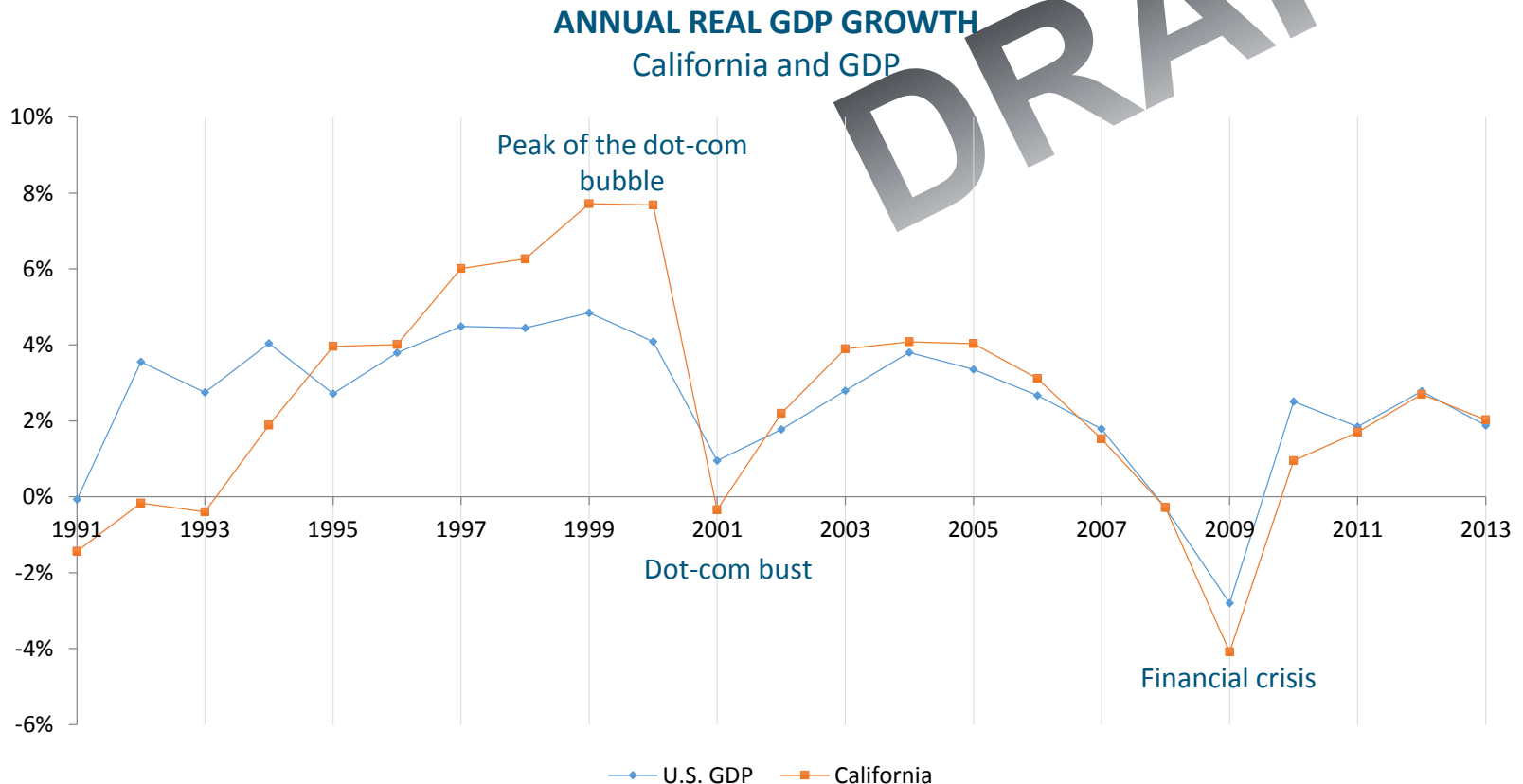
# Until 2004, population growth in California and the SCAG region outpaced national population growth

HISTORICAL POPULATION GROWTH  
SCAG Region, California, United States



- Traditionally, population growth in California and SCAG Region has outpaced national population growth
- Since 2004, however, the trend has reversed and the country's overall population increases at a faster rate than the SCAG Region

# California's economic output boomed before dot-com bubble bust in 2000

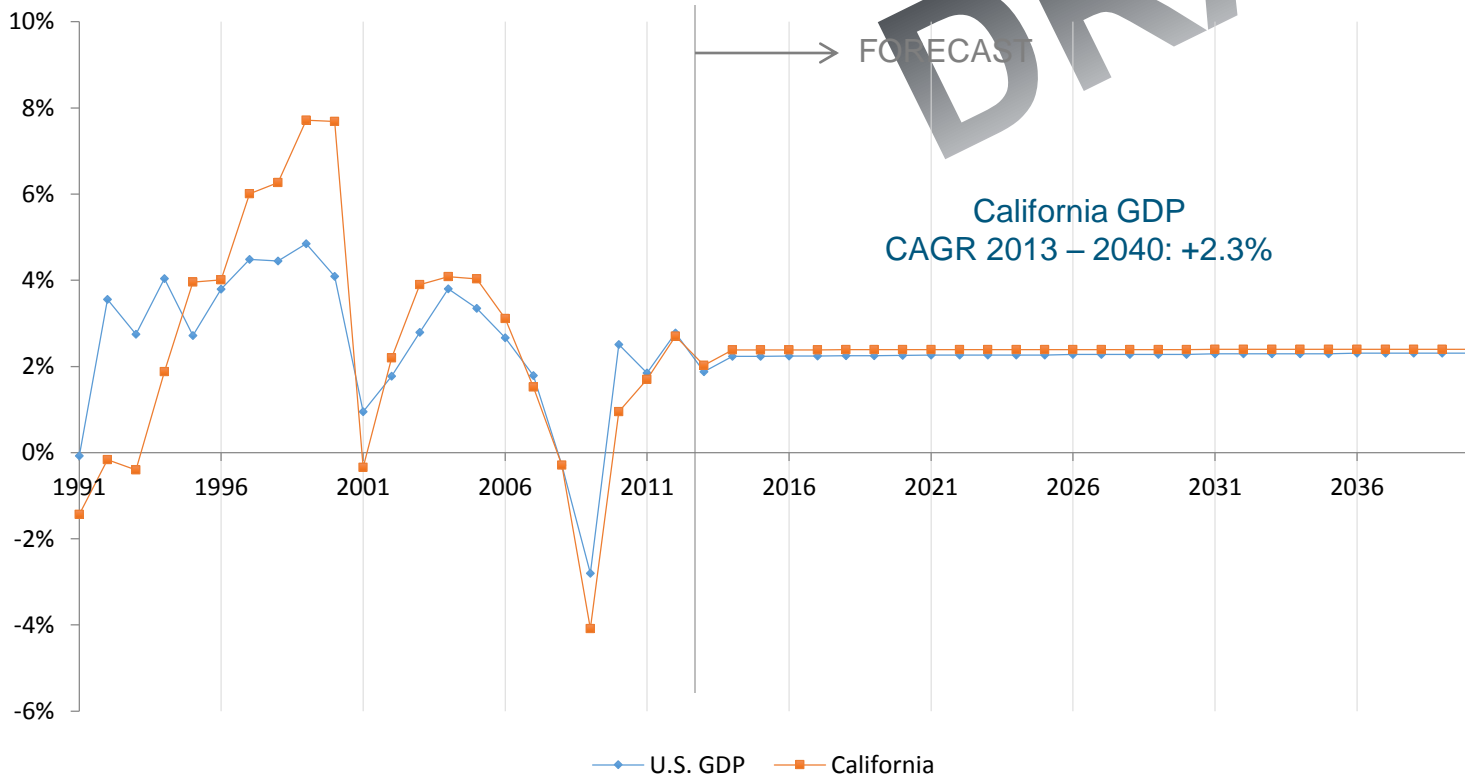


- California's economic output surged before the dot-com bubble bust in 2000
- After 2001, California GDP increases at a similar growth rate as the national output

# California's economic output is expected to increase 2.3% per annum over the forecast period

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**FORECAST OF REAL GDP**  
California and United States

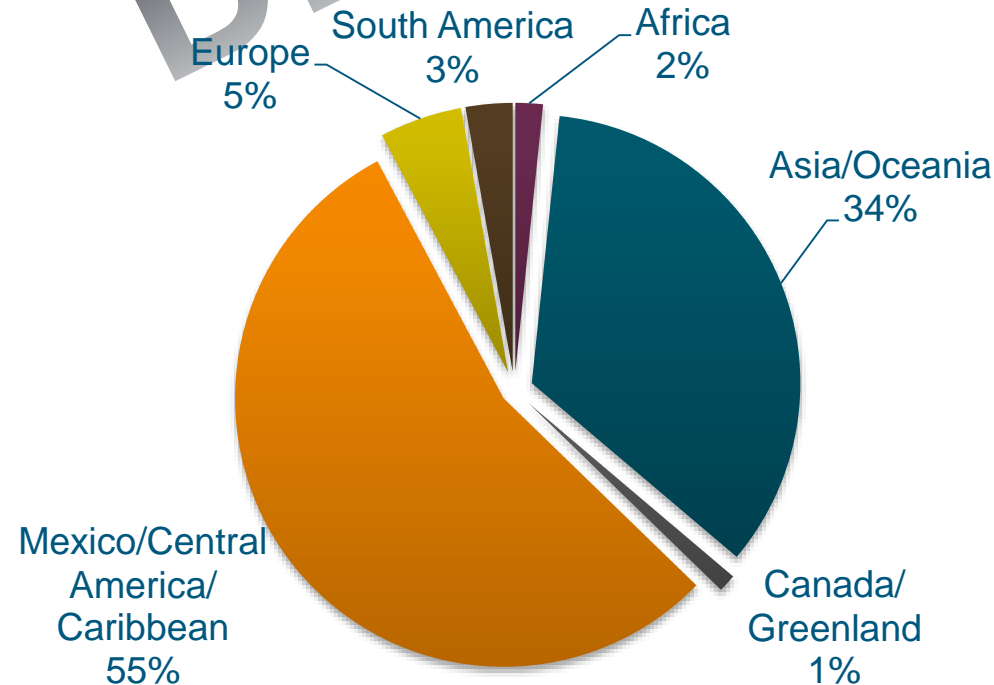


# SCAG is home to a significant foreign-born communities that generate demand for air travel

The SCAG Region is an ethnically diverse region:

- More than 5.3 million people in the Los Angeles-Long Beach-Santa Ana and Riverside-San Bernardino-Ontario Metro Area were born in another country
- With friends and relatives becoming more and more dispersed, the need for travel increases to maintain close links

**FOREIGN BORN RESIDENTS BY REGION**  
Los Angeles-Long Beach-Santa Ana, CA Metro Area  
Riverside-San Bernardino-Ontario, CA Metro Area





## ...while the SCAG Region also hosts major manufacturing centers

- The SCAG Region hosts major manufacturing centers:
  - Los Angeles County is the largest manufacturing center in the U.S., employing 365,500 workers in 2012.
    - The largest sectors include transportation equipment, apparel, fabricated metal products, computer and electronic products, and food products
  - Orange County is also home to a major manufacturing center with 157,700 jobs
    - Main sectors here include computer and electronic products, fabricated metal products, medical equipment, transportation (primarily aerospace), and machinery
  - The Inland Empire is also an important manufacturing center with employment reaching 93,600 jobs in 2012

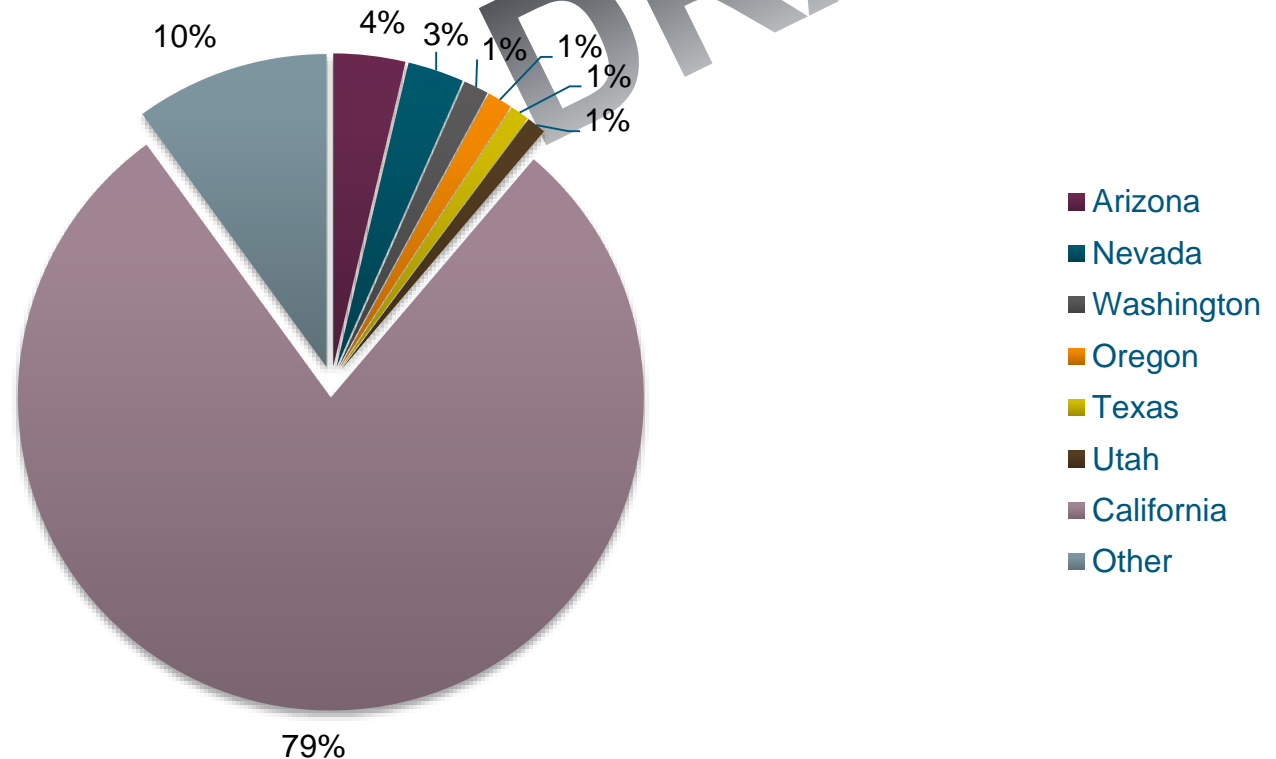
# Higher and specialized education is a core strength of the SCAG Region

- The SCAG region hosts well over 100 four-year public and private college and university campuses:
  - Three University of California campuses (UCLA, UCI, UCR)
  - Eight Cal State campuses, including Cal Poly Pomona
  - Nationally recognized private institutions, including USC, California Institute of Technology, the Claremont Colleges, the University of Redlands
  - Top-rated specialized institutions like the Art Center College of Design and the California Institute for the Arts
  - Medical research centers, such as the Loma Linda University School of Medicine



In 2013, California had 227.2 million domestic person-trips, 184.2 million of which were for leisure

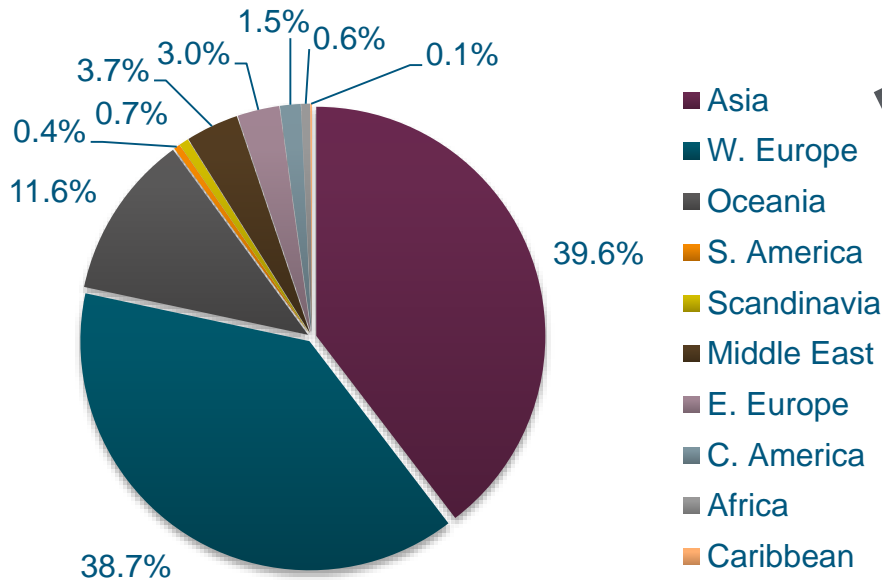
**BREAKDOWN OF DOMESTIC LEISURE VISITORS**  
California



- 78.6% of California's domestic leisure visitors in 2013 were residents of California

Source: VisitCalifornia.com

# 15.6 million international visitors traveled to California in 2013



Country / region	Number of Visitors
China	819,000
United Kingdom	652,000
Australia	553,000
Japan	536,000
Germany	21,000
South Korea	389,000
France	388,000
Scandinavia	241,000

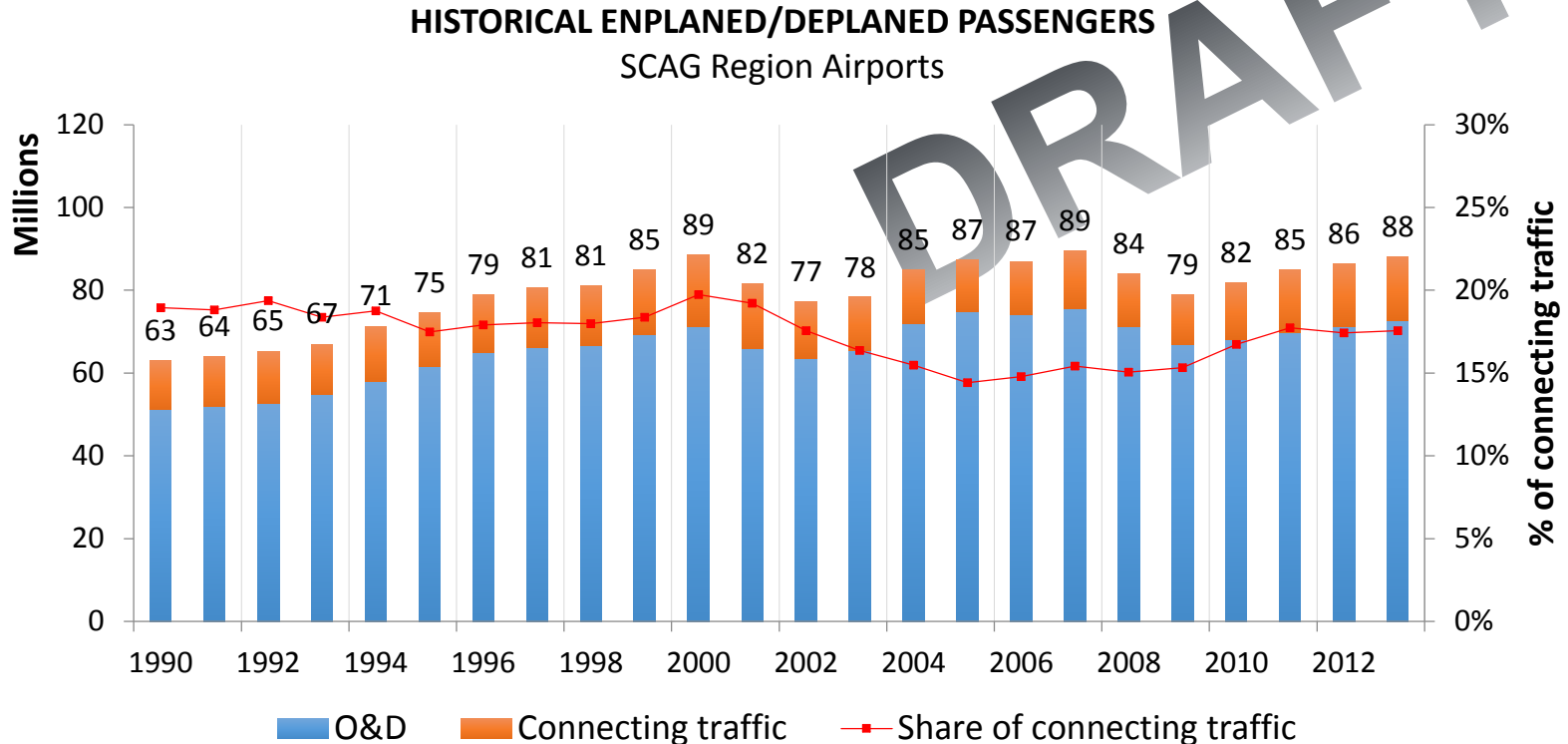
- In 2013 15.6 million international visitors traveled to California
- Of those inbound visitors:
  - 6.6 million were from overseas origin
  - 7.4 million were from Mexico
  - 1.5 million were from Canada

# 15.6 million international visitors traveled to California in 2013

- Hollywood
- Downtown Los Angeles
- Santa Monica / Venice Beach
- Malibu
- Amusement Parks
  - Disneyland
  - Universal Studios
  - Knott's Berry Farm
- Palm Springs
- Joshua Tree National Park
- Big Bear
- Ventura/Channel Islands



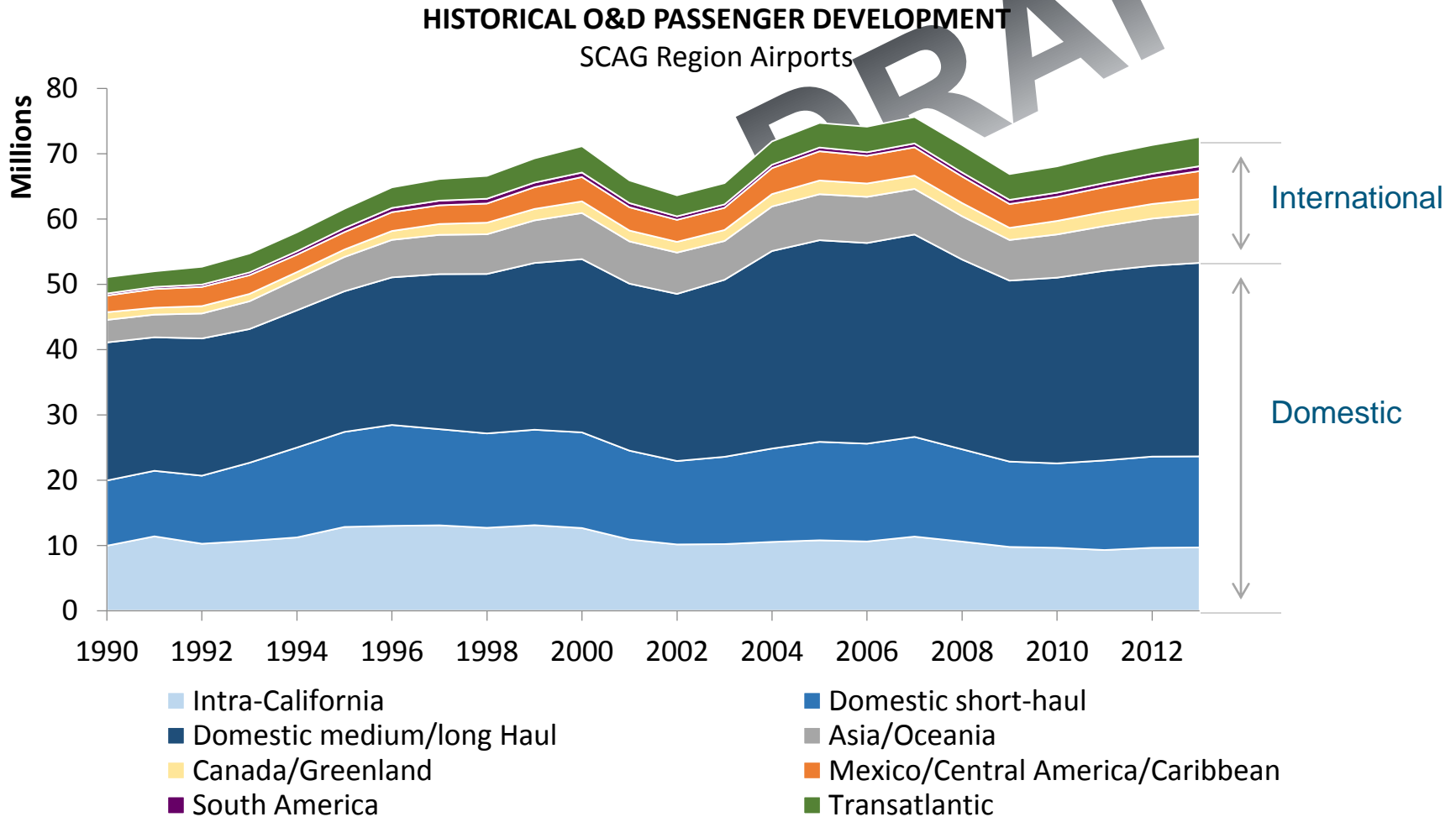
# Total enplaned traffic at SCAG Region Airports increased from 63.0 MAP in 1990 to 88.0 MAP in 2013



- Total enplaned traffic at SCAG Region Airports increased from 63.0 MAP in 1990 to 88.0 MAP in 2013 – equivalent to a compound annual growth rate of 1.5%
- Combined, the share of connecting passenger at SCAG Region Airports hovers around 17% during the historic period reviewed

Sources: United States Department of Transportation Origin and Destination Passenger Survey, T-100 Onboard Passenger, and 298(c) Commuter Onboard databases.

# Total O&D traffic to the SCAG Region Airports increased from 51.1 MAP in 1990 to 72.6 MAP in 2013



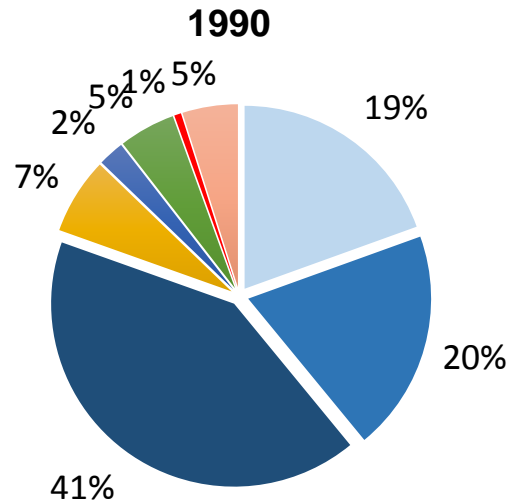
Sources: United States Department of Transportation Origin and Destination Passenger Survey



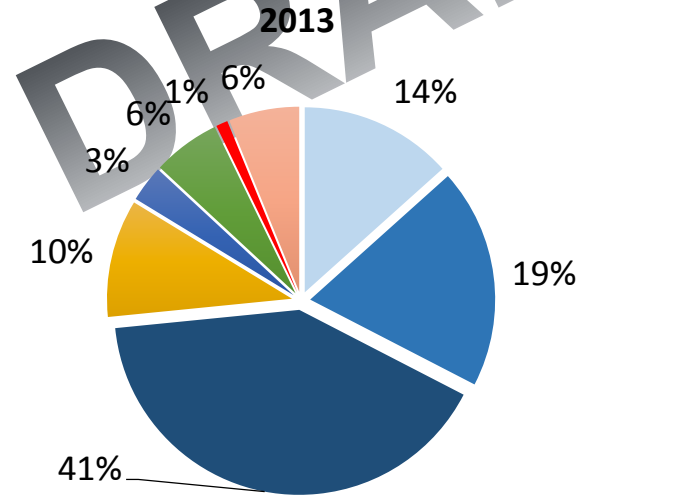
# Domestic medium/long-haul remains the largest O&D market

But Asia-Pacific is among the fastest growing segments, together with South America

**SHARE OF O&D TRAFFIC BY MARKET SEGMENT**  
SCAG Region Airports



- Intra-California
- Domestic medium/long Haul
- Canada/Greenland
- South America



- Domestic short-haul
- Asia/Oceania
- Mexico/Central America/Caribbean
- Transatlantic

- Although its share decreased from 80.4% in 1990 to 73.4% in 2013, domestic O&D traffic remains the largest O&D segment
- Decrease largely attributable to decrease in Intra-California O&D passenger traffic



# Forecast methodology builds on recognized relationship between air travel demand and socio-economic variables

- There is a proven close relationship between socio-economic conditions and traffic growth, e.g.:
  - Demand increases with positive growth in source-market GDP levels
  - Demand decreases with increases in oil prices and fares
- For each of the market segments, the forecast methodology aims to statistically explain changes in the historical number of air passengers through changes in the economic variables
  - A regression analysis is a statistical tool that can find the relationship that best explains historical air traffic development
  - A number of variables were tested to identify the factors that show the best correlation with historic traffic developments:
    - U.S. GDP, California State GRP, GDP of the main source markets, income per capita, oil prices, currency exchange rates and real air fare data.

## Forecast approach focuses on aggregate demand to SCAG Region Airports plus SBA, SAN, and CLD

- SCAG Region is home to multiple airports that have overlapping catchment areas
  - Travelers to/from SCAG region have the option to choose between several airports for their needs
  - Predicting future traffic levels at individual airports in the SCAG region cannot be done in isolation and should consider the region-wide trends and dynamics
- The airports of SBA, SAN and CLD are also included in the forecast methodology as their catchment areas overlap with the SCAG Region Airports
- The forecasting process starts by producing a Macro-Economic Forecast Model to predict total O&D traffic to the region

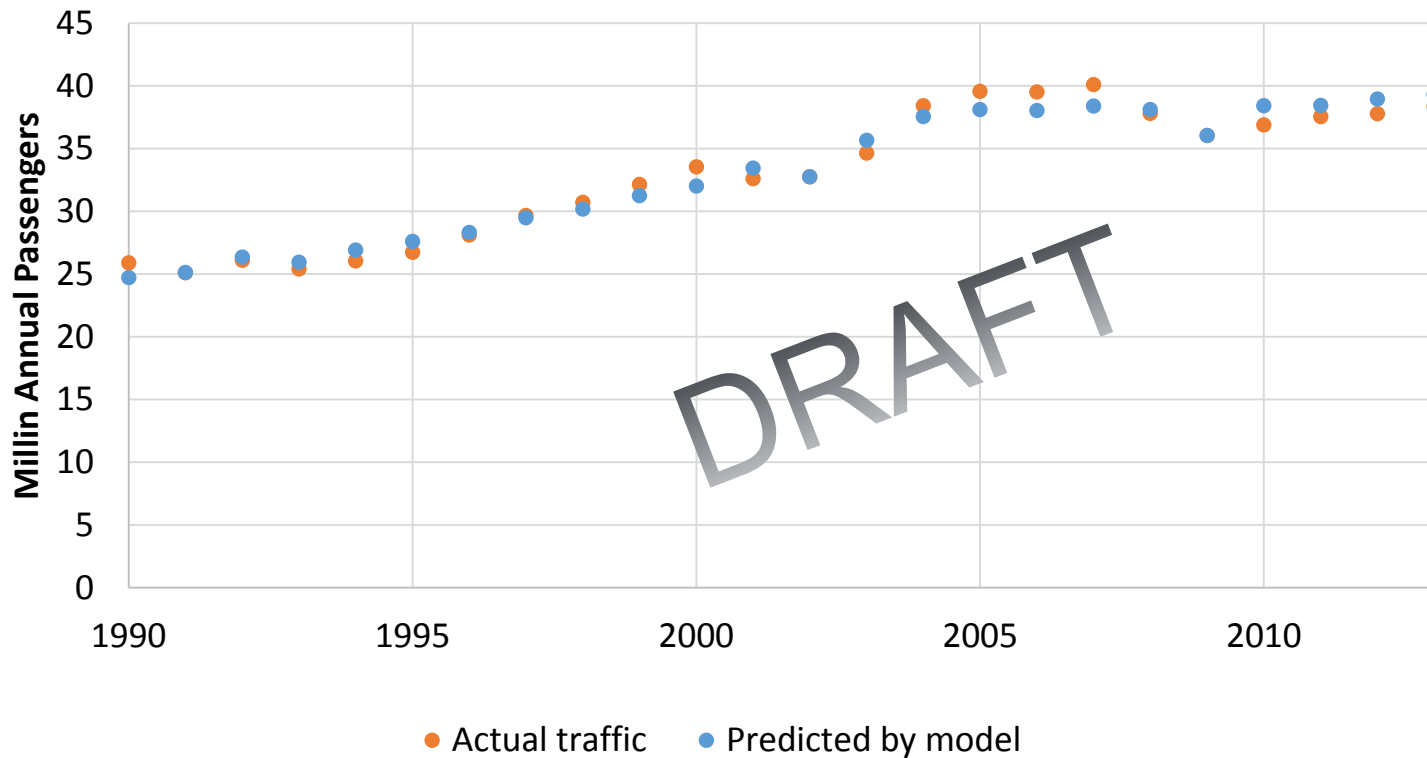
## A macro-economic forecast model was developed for each primary geographic market segment

- Recognizing that different market regions have different demand drivers and dynamics, passenger O&D markets are typically divided into different market segments
- This can be done based on characteristics of the market, such as geography and length of flight
- By analyzing historic O&D traffic levels, air passenger traffic to the region was divided in terms of the key market segments:
  - **Domestic**
    - Intra-California, Short-haul, Medium-Long haul
  - **International**
    - Asia/Oceania, Canada/Greenland, Mexico/Central America/Caribbean, South America, Transatlantic

# Forecast model for medium-and long-haul domestic traffic focuses on GDP and Fares

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**GOODNESS-OF-FIT ECONOMETRIC MODEL**  
Domestic medium-to long-haul O&D traffic



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## Forecast results for SCAG Region Airports

- Total **O&D** passenger movements to the region increase from

72.6 MAP in 2013 to

**112.2 MAP in 2040**

*(Equivalent to annual growth of 1.6%)*

- Total passengers increase from

88.0 MAP in 2013 to

**136.2 MAP in 2040**

*(Equivalent to annual growth of 1.6%)*

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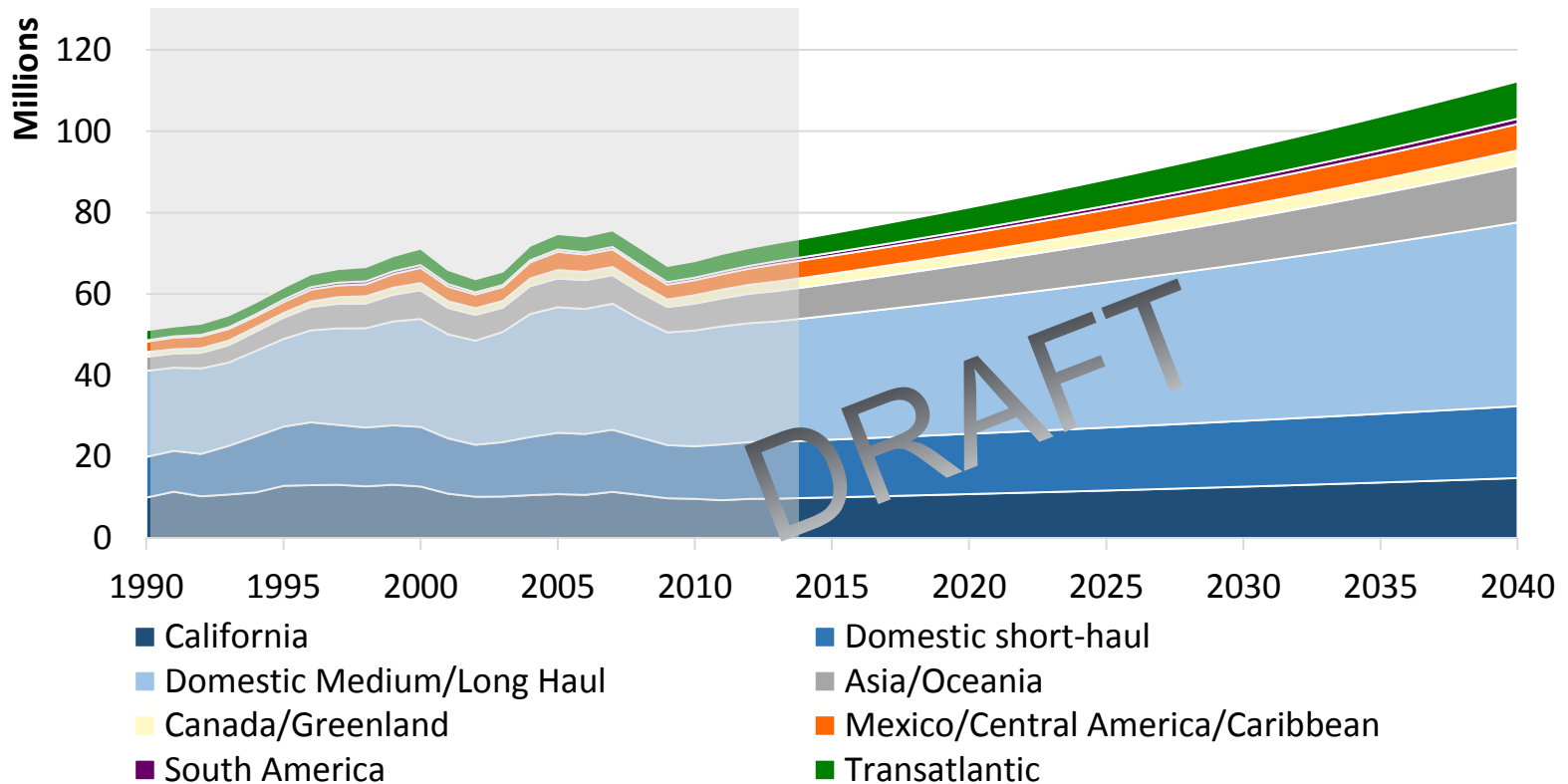
## Comparison to previous RTP forecasts

- 1998 RTP—157.4 MAP in 2020
- 2001 RTP—167 MAP in 2025
- 2004 RTP—170 MAP in 2030
- 2008 RTP—165.3 MAP in 2035
- 2012-2035 RTP—145.9 MAP in 2035 (Baseline Scenario)
  
- Current forecast is 136 MAP in 2040
  - Events since 9/11, including the sharp increase in fuel prices in the early 2000s followed by the financial crisis, have resulted in consistently less aggressive forecasts of aviation demand

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# Total O&D passenger movements to the region increase from 72.6 MAP in 2013 to 112.2 MAP in 2040

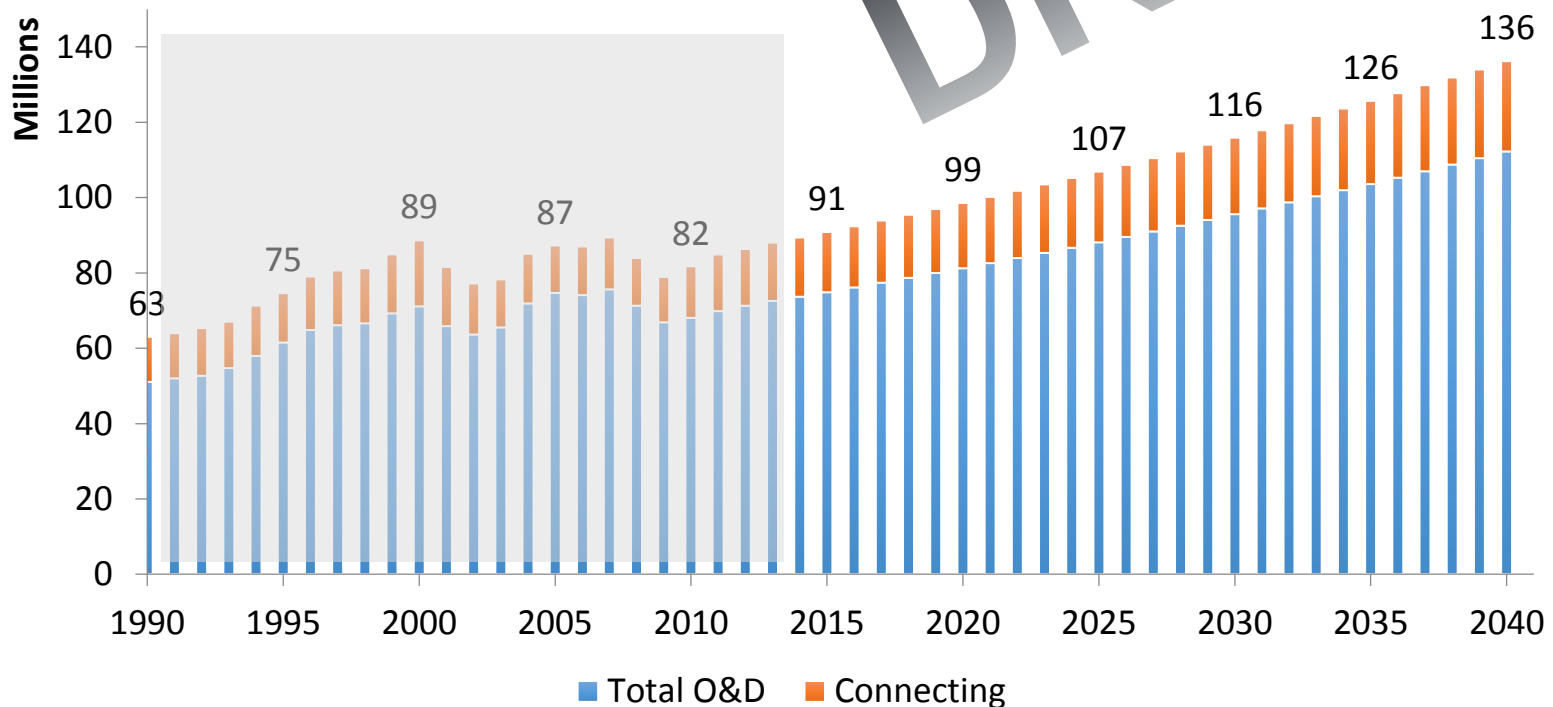
**FORECAST OF O&D PASSENGER MOVEMENTS**  
SCAG Region Airports



- Although international traffic grows at slightly higher clip, the domestic market remains the largest segment, representing 69.1% in 2040

# Total enplaned/deplaned passengers increase from 88.0 MAP in 2013 to 136.2 MAP in 2040

**FORECAST OF TOTAL ENPLANED/DEPLANED PASSENGERS**  
SCAG Region Airports



- The share of connecting passengers remains stable around 17%



## Next steps

- Allocate aggregate demand for the SCAG region over the individual airports
- Analyze scenarios as instructed by Transportation Committee
- Develop air cargo forecasts

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