



2016 2040 RTPSCS

A PLAN FOR OUR FUTURE:
AVIATION AND AIRPORT GROUND ACCESS

Aviation Technical Advisory Committee (ATAC)

Ryan N. Hall and Steven Greene
December 10, 2015

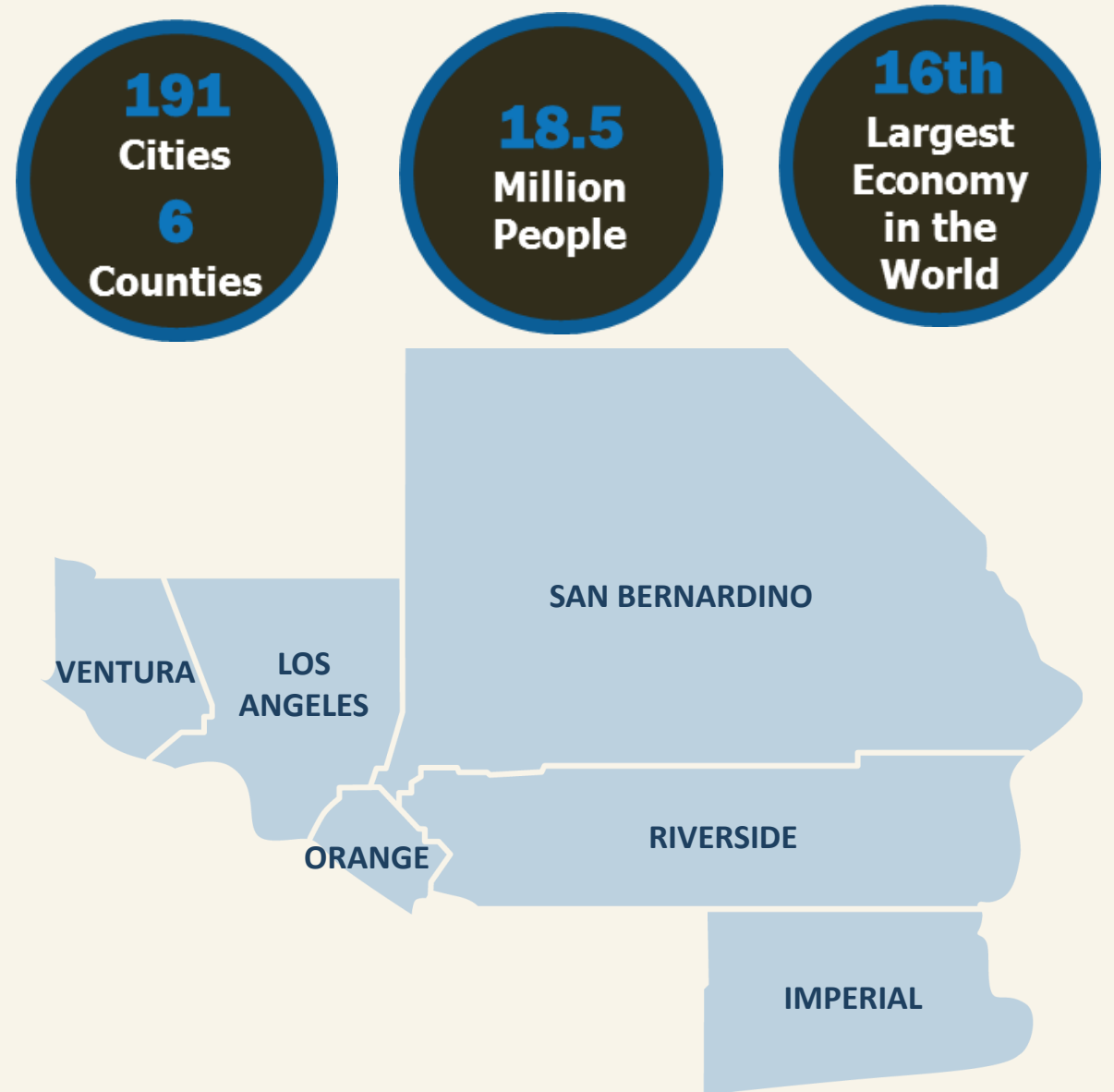
2016 2040 RTP/SCS

RTP/SCS OVERVIEW, VISION AND SCHEDULE



What is an RTP/SCS?

- Long-term vision and investment framework
- Federal Requirements
 - Updated every 4 years to maintain eligibility for federal funding
 - Long Range: 20+ years into the future
 - Financially-constrained: Revenues = Costs
 - Passes regional emission standards (Conformity)
- State Requirements
 - Must meet GHG reduction targets for passenger vehicles



Why update the RTP/SCS?

- Move people & goods more efficiently
- Increase accessibility
- Meet all legal & statutory requirements
 - ARB targets
 - Transportation air quality conformity
- Enhance sustainability through integrating land use and transportation resulting in numerous co-benefits
- Align with major trends in demographics & technology



Our Vision:

Vibrant, livable communities that are...

- Healthy and safe
- Offer transportation options that provide easy access to schools, jobs, service, health care, and other basic needs
- Conducive to walking and bicycling
- Provide access to parks and natural lands
- Supportive of opportunities for business, investment and employment, fueling a more prosperous economy



Major Transportation Strategies

- Expanding our regional transit system to give people more alternatives to driving alone
- Expanding passenger rail
- Promoting walking, biking and other forms of active transportation
- Preserving the transportation system we already have (Fix it First)



Major Transportation Strategies

- Improving highways and arterials
- Managing demands on the transportation system
- Optimizing the performance of the transportation system
- Strengthening the regional transportation network for goods movement
- Improving airport access
- Leveraging technology



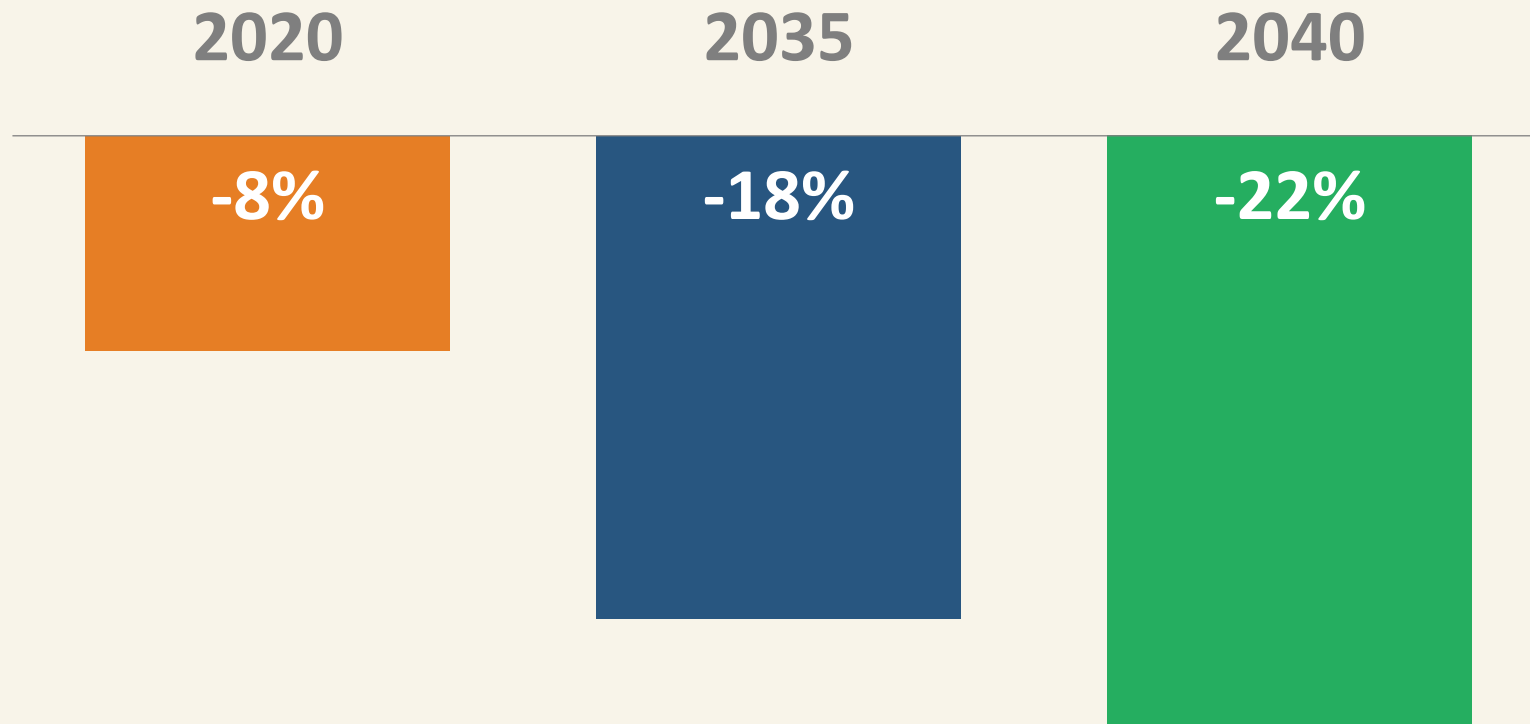
Major Land Use Strategies

- Focusing new growth around transit
 - High Quality Transit Areas (HQTAs)
 - Livable Corridors
 - Neighborhood Mobility Areas
- Preserving Natural Lands



Greenhouse Gas (GHG) Emissions

Draft Plan Per Capita Reduction from 2005 (Draft)

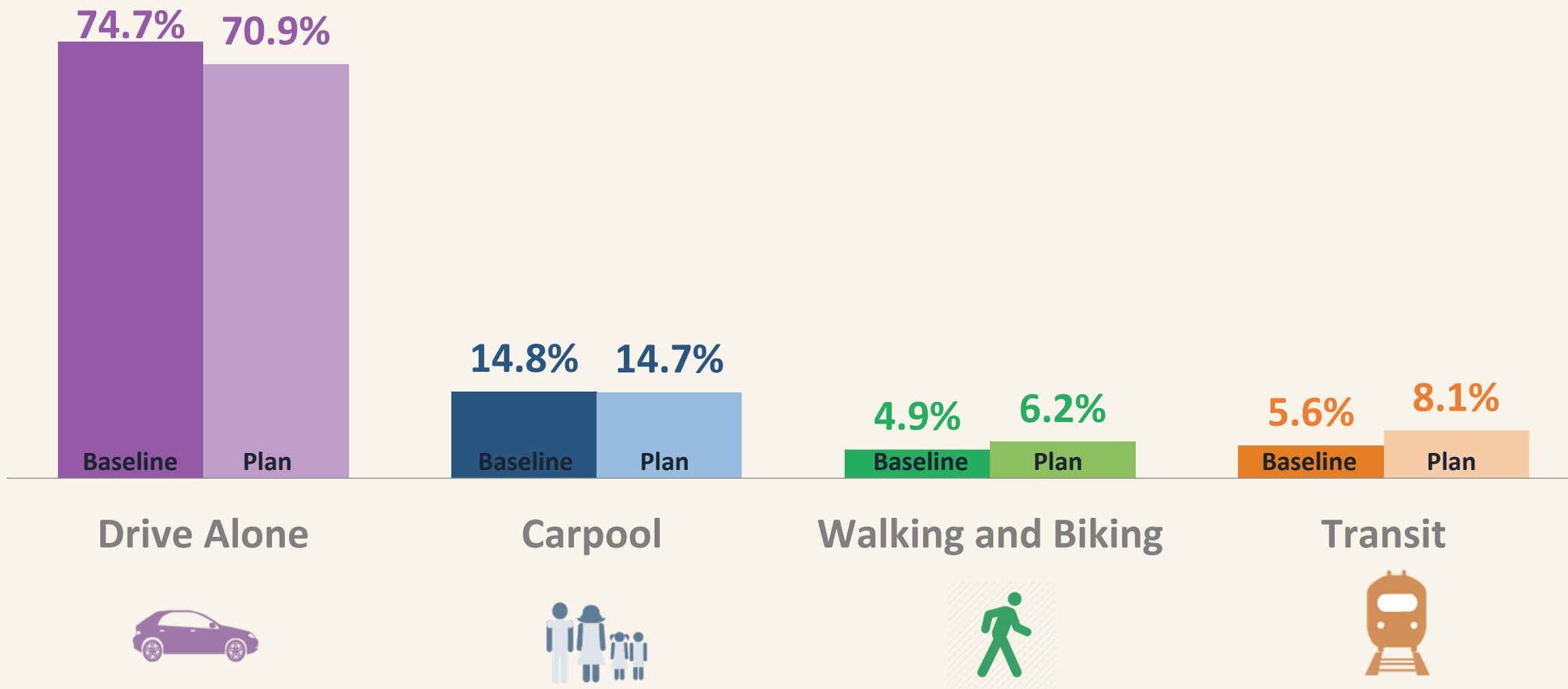


Meets State
Targets &
Promotes
Sustainability



Mode Choice – Work Trips

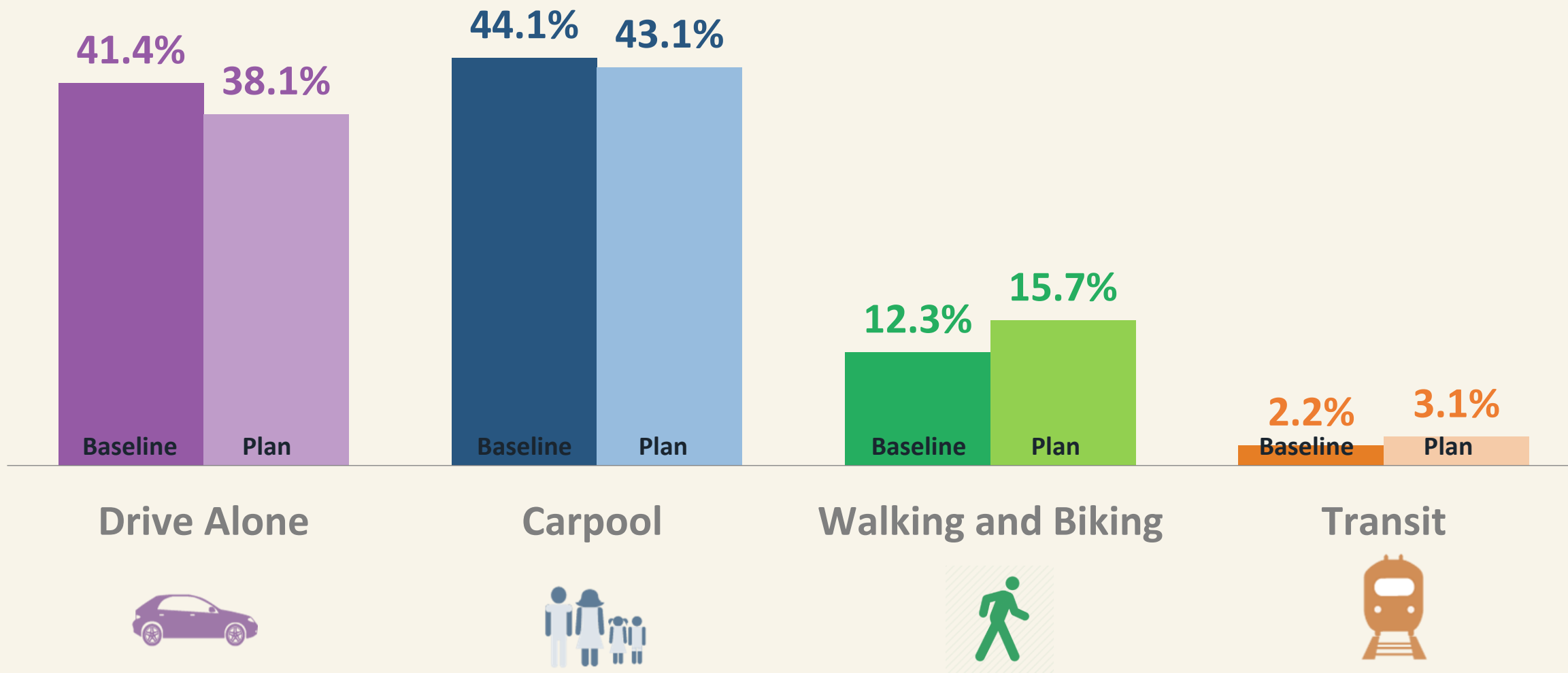
Draft Plan vs. Trend Baseline (Draft)



Note: These figures include additional improvements in walking and biking associated with the benefits of certain active transportation investments, which are analyzed as a supplement to SCAG's Regional Trip Based Model

Mode Choice – Total Trips

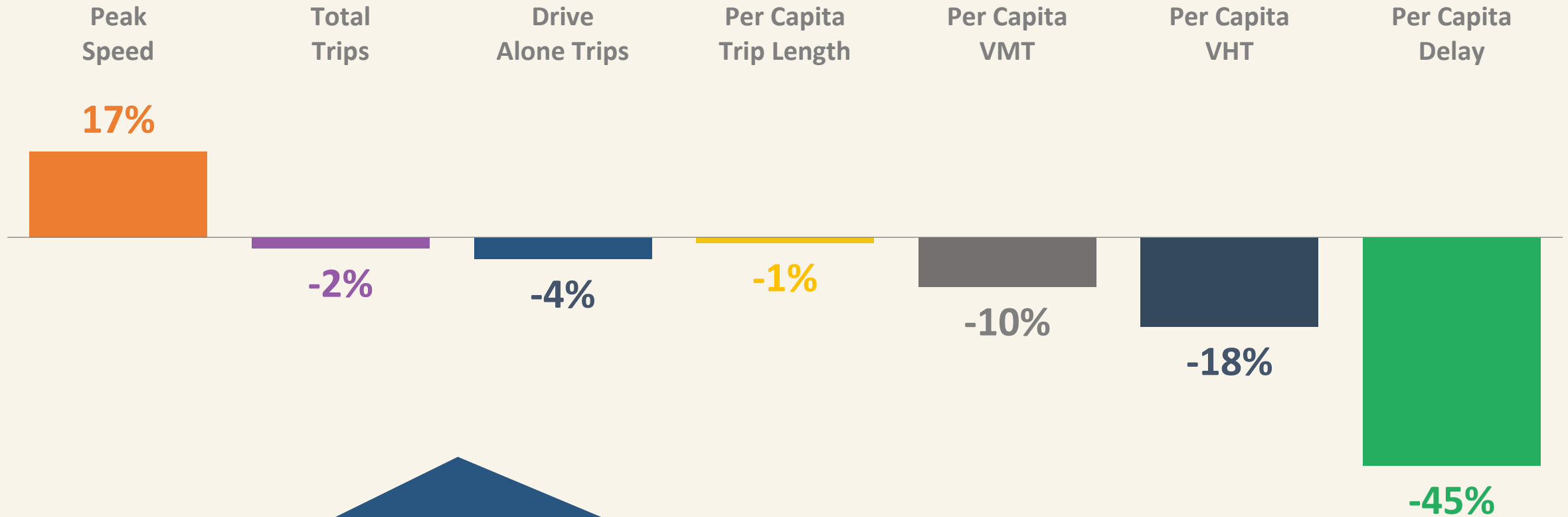
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Roadway Results

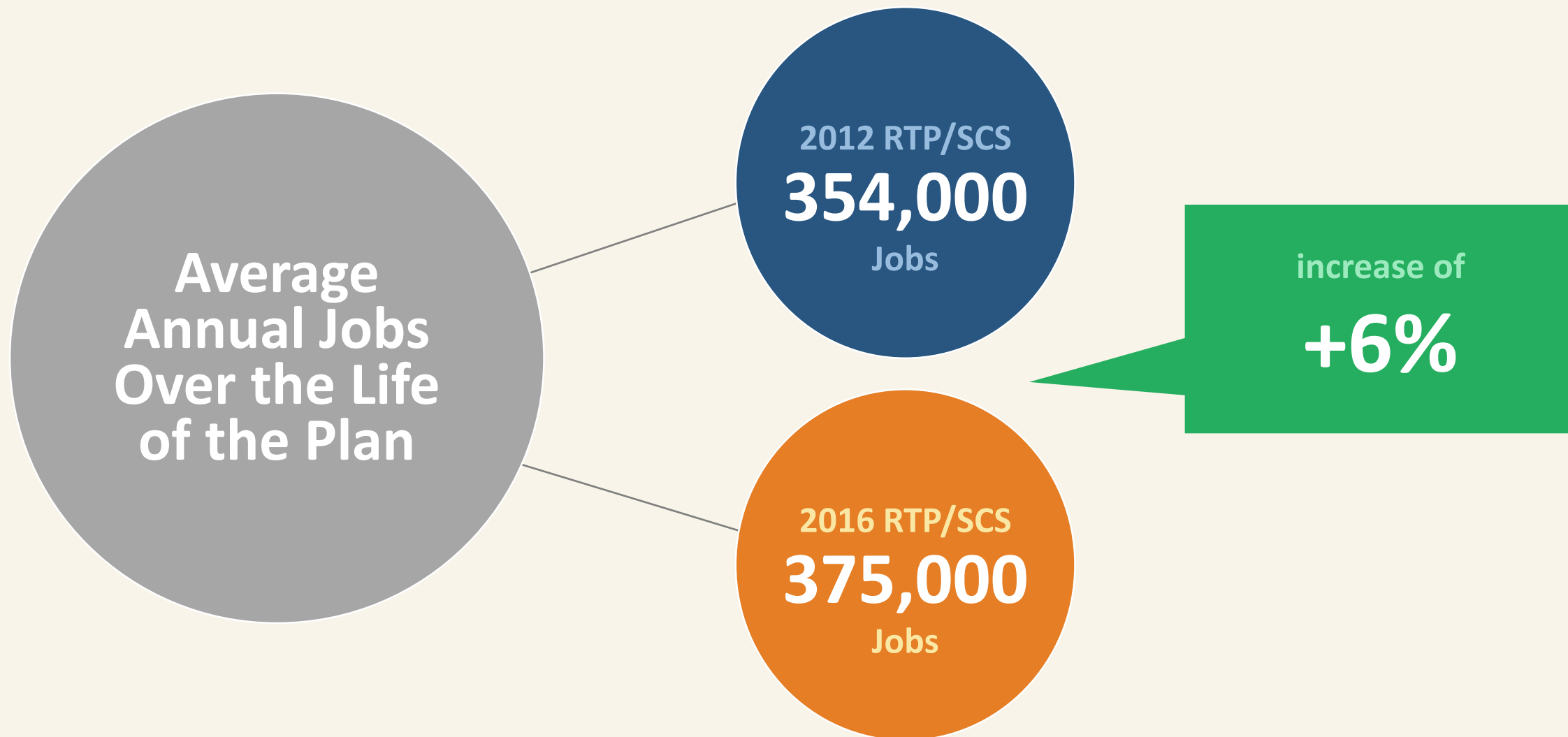
Draft Plan vs. Trend Baseline (Draft)



Increases Mobility

Economic Benefits through 2040

Network Benefits (Draft)



Upcoming Schedule

**2016 RTP/SCS
Public Comment Period**

Minimum 55 Days
Ends February 1, 2016

**2016 RTP/SCS
PEIR Public Comment Period**

Minimum 45 Days
Ends February 1, 2016

Elected Officials Briefings

January 2016

Public Hearings

January 2016

**Final Adoption of
2016 RTP/SCS & PEIR**

April 7, 2016



2016 2040 RTPSCS

AVIATION ELEMENT OVERVIEW

- Chapter 2: Where We Are Today
- Chapter 5: The Road to Greater Mobility & Sustainable Growth
- Aviation and Airport Ground Access Appendix
- Project List Appendix
- Program Environmental Impact Report (PEIR)

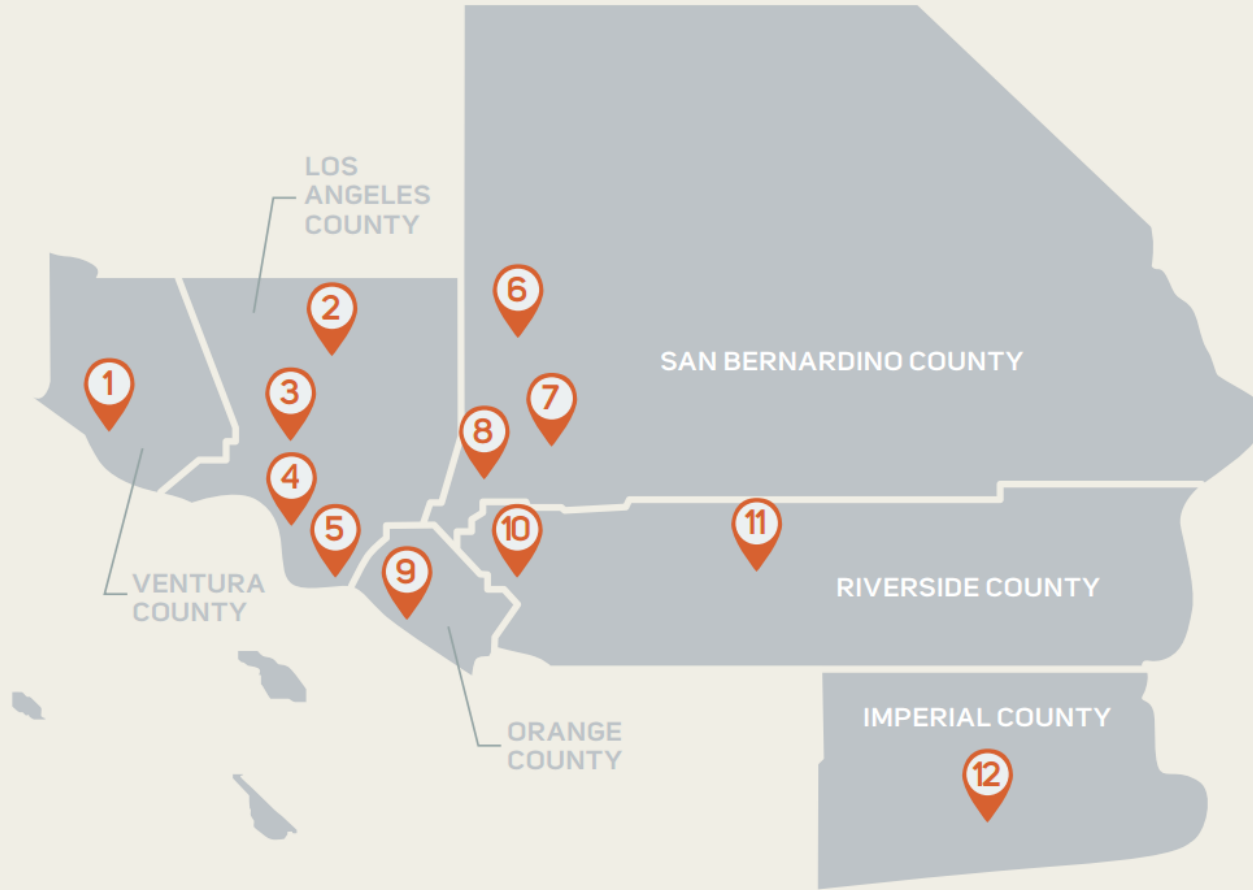
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Map of Airports

12

EXISTING & PLANNED
COMMERCIAL
AIRPORTS SERVING
THE SCAG REGION



- ① Oxnard
- ② Palmdale
- ③ Burbank Bob Hope
- ④ Los Angeles International
- ⑤ Long Beach
- ⑥ Southern California Logistics
- ⑦ San Bernardino International
- ⑧ Ontario International
- ⑨ John Wayne
- ⑩ March Inland Port
- ⑪ Palm Springs International
- ⑫ Imperial County

Aviation Existing Conditions

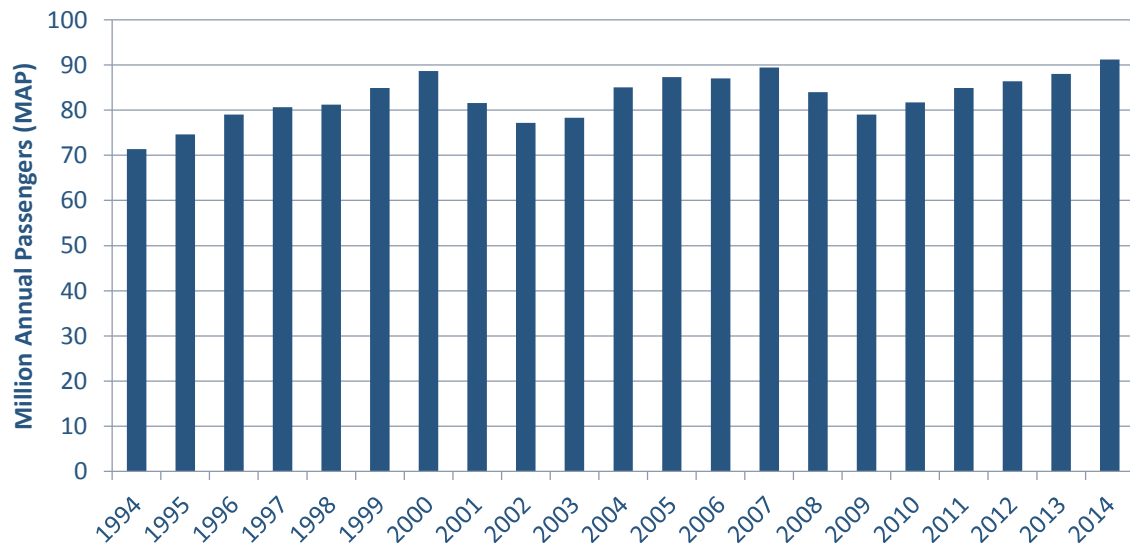
- 60+ airlines offer scheduled service
 - 1200+ daily commercial departures to 169 destinations in 37 countries
- Large regional market with no dominant air carrier leads to competition for travelers and results in some of the lowest average airfares in country
- Large General Aviation system (40+ GA airports)
 - VNY is the 2nd busiest GA airport in U.S., and now offers Customs and Border Protection services
- Air travel generates 200,000 daily ground trips
- Airports play a critical role in the region's goods movement network

Aviation Existing Conditions

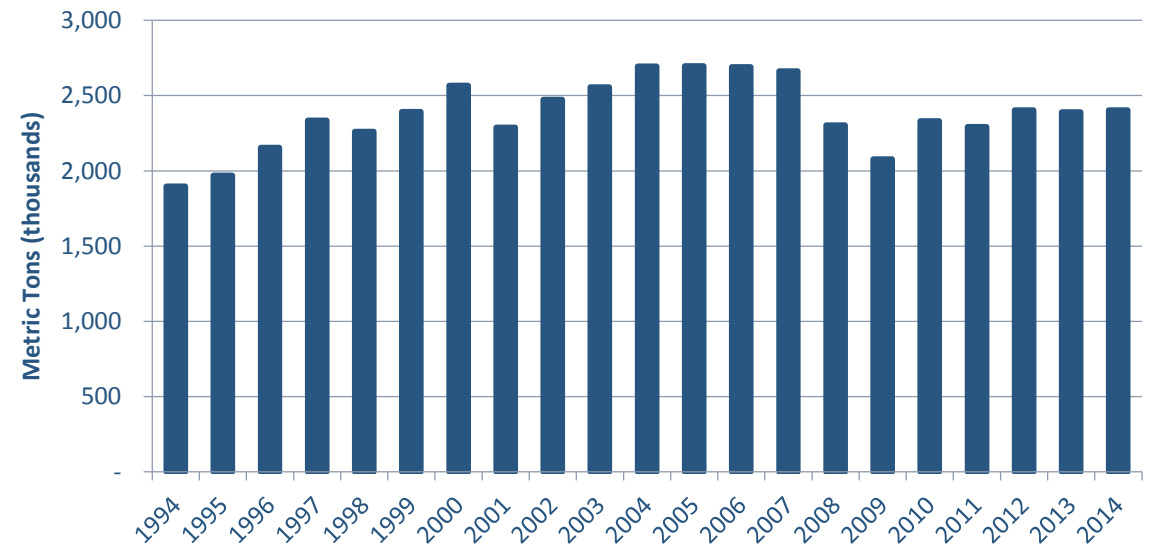
In 2014:

- Air Passenger Demand: **91.2 million** total passengers
 - Surpassing peaks of 89.4 million in 2007 and 88.7 million in 2000.
- Air Cargo Demand: **2.4 million metric tons** of cargo
 - 10% below pre-recession peak of 2.7 million metric tons in 2004-2006

Annual Passengers at SCAG Region Airports

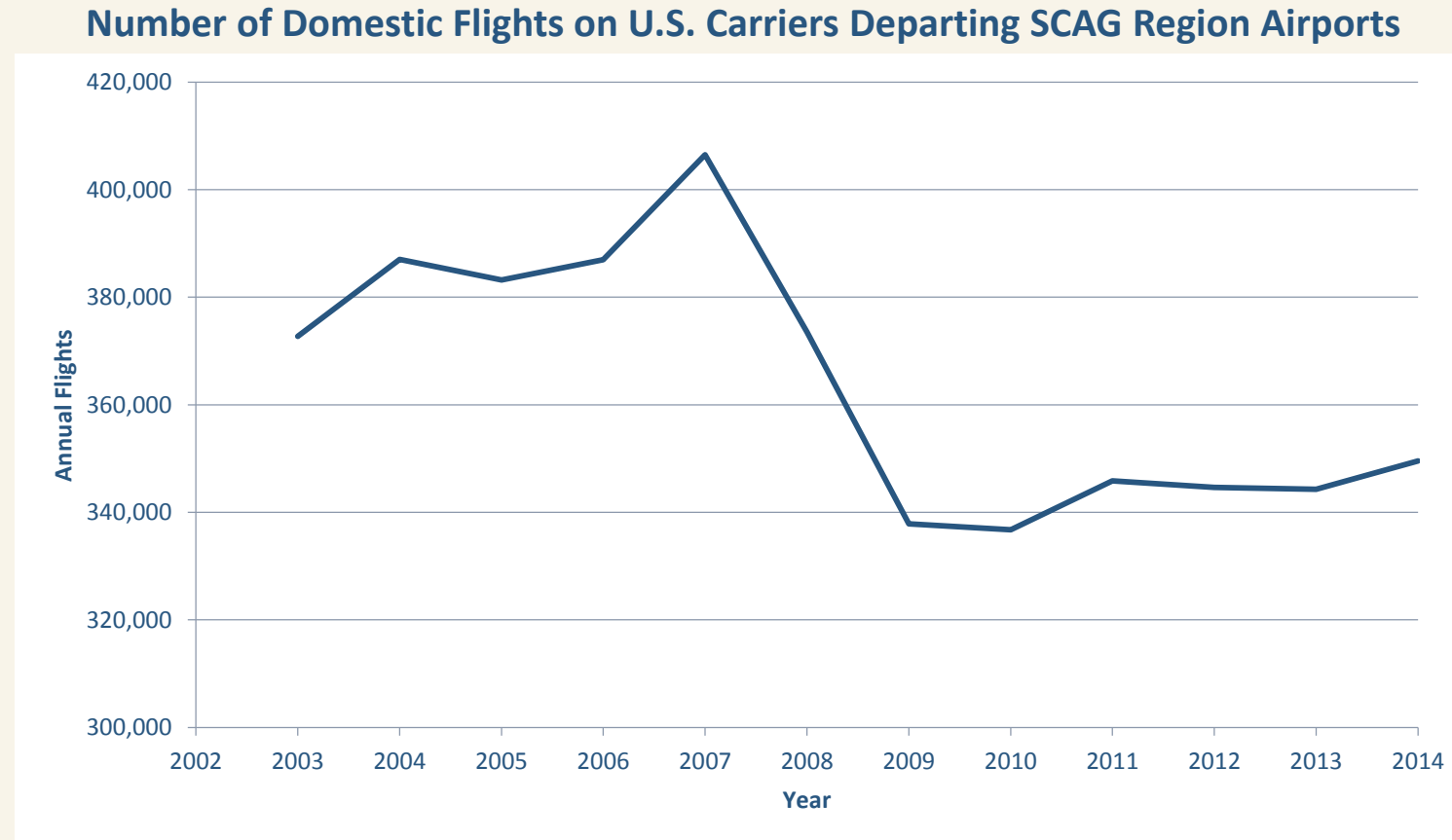


Annual Cargo at SCAG Region Airports



Historic Trends – Departing Domestic Flights

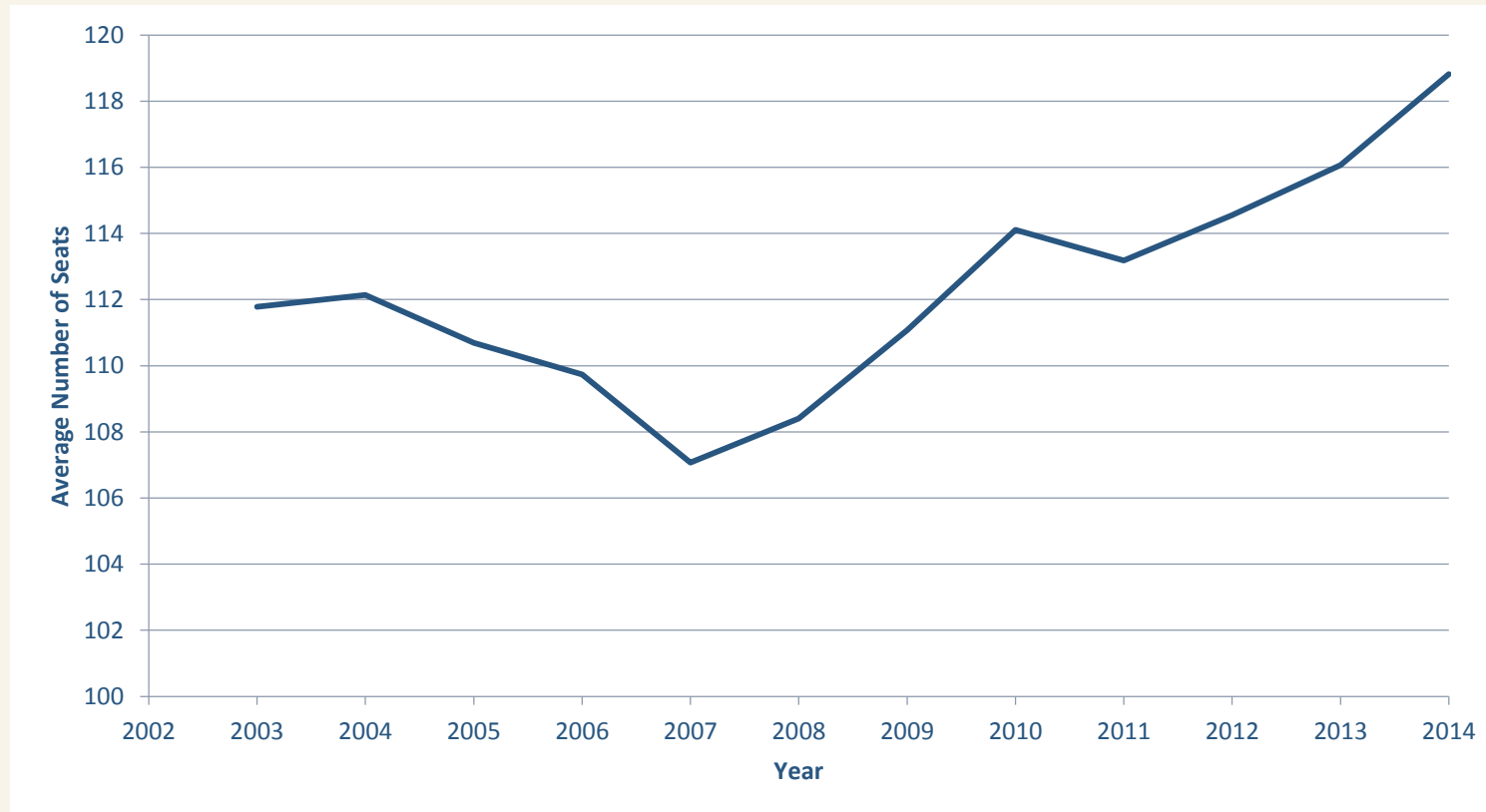
Since 2009, total commercial operations at SCAG region airports has been essentially flat.



Historic Trends – Average Seats per Flight

Since 2007, the average number of seats per domestic flight has been increasing as airlines are shifting their fleets to larger planes.

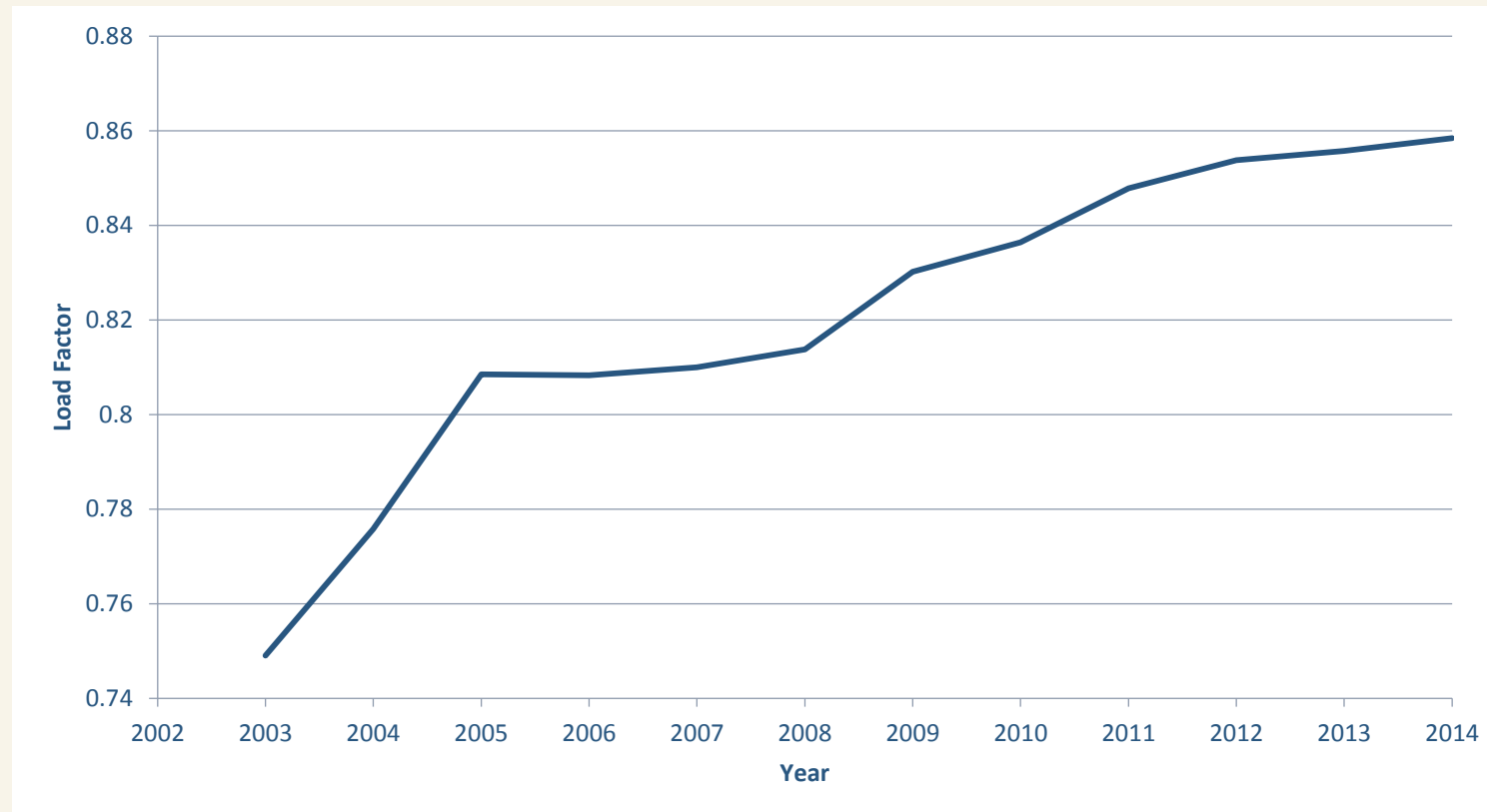
Average Number of Seats per Flight is Increasing



Historic Trends – Average Seats per Flight

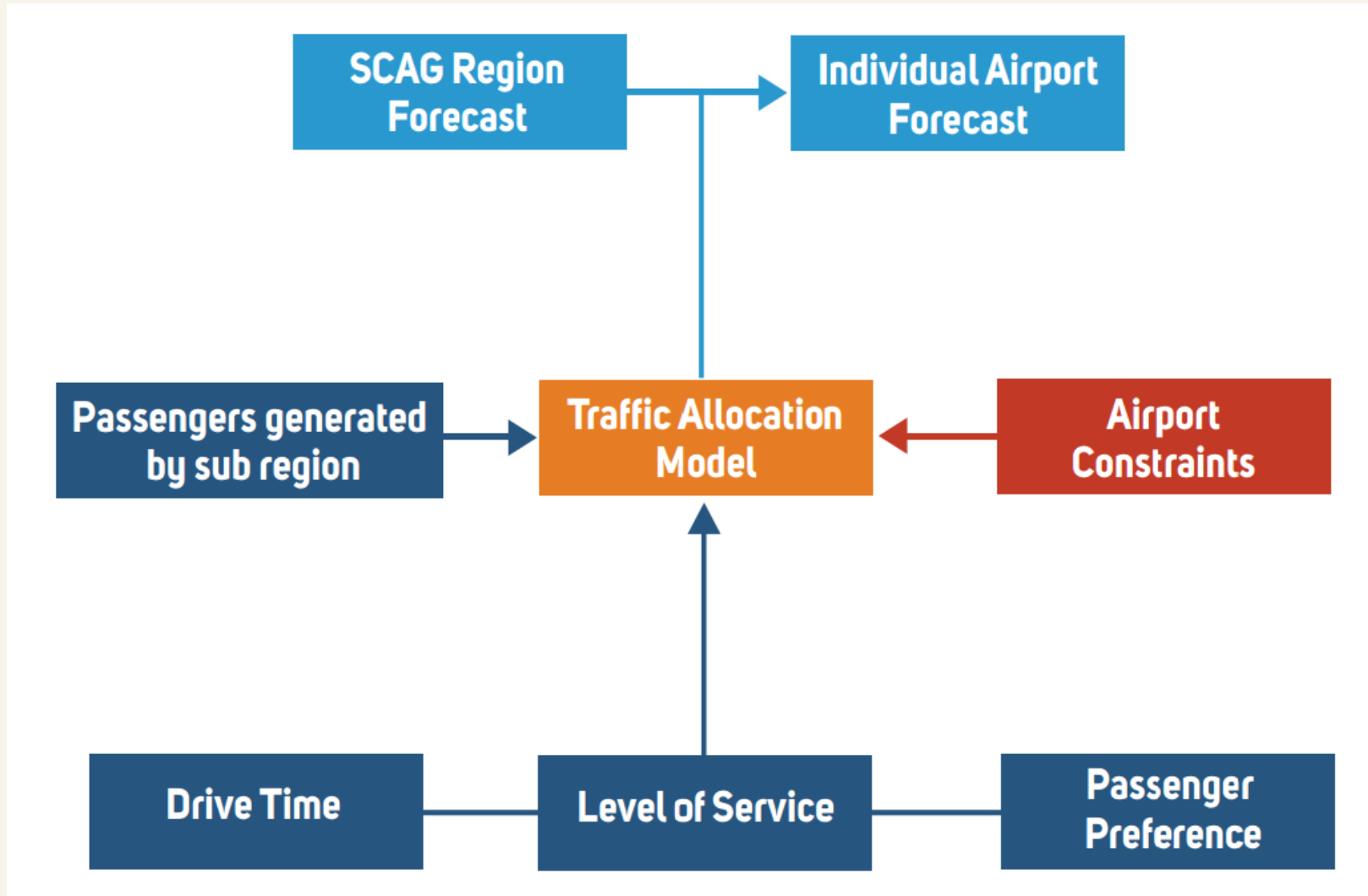
The combination of larger airplanes *and* higher load factors results in more total passengers, even though the number of flights is basically flat.

Load Factors are also Increasing



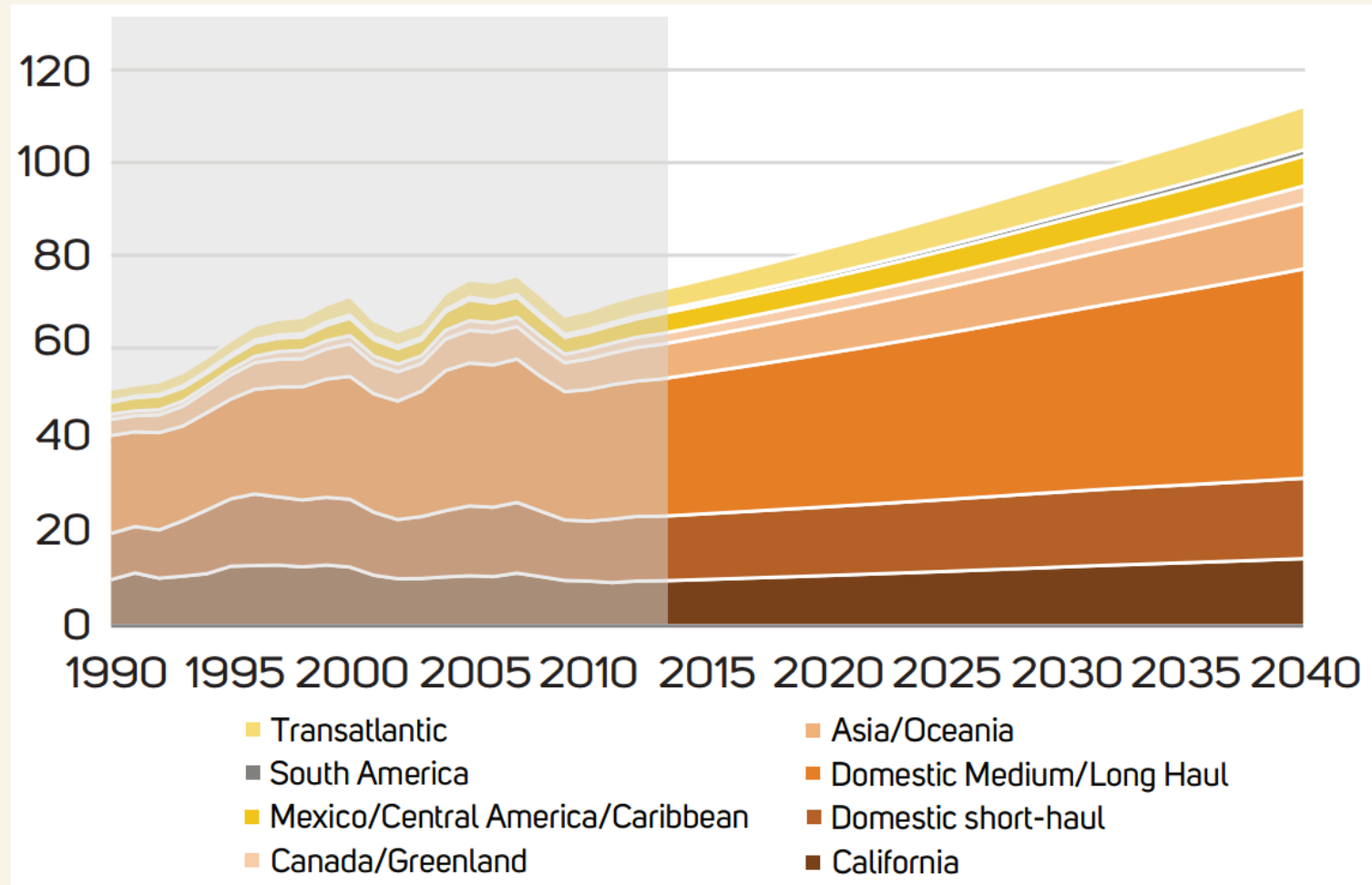
2040 Air Passenger Forecast

Air Traffic Allocation Model



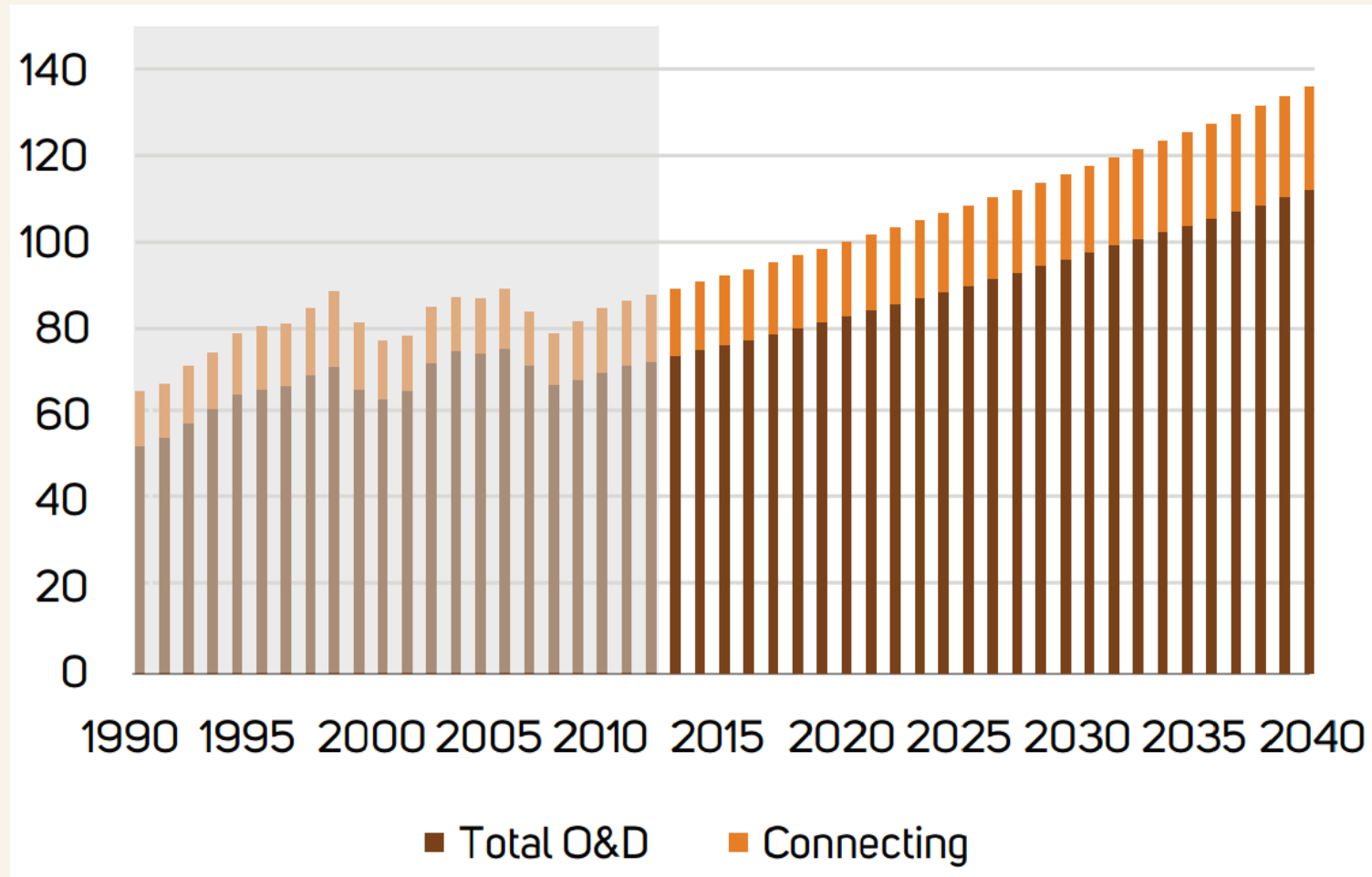
2040 Air Passenger Forecast

Forecast O&D Passenger Demand



2040 Air Passenger Forecast

Forecast Total Enplaned and Deplaned Passengers



Midpoint of 2040 Total
Regional Aviation Demand:

136.2 MAP



Air Cargo Forecasts

Approach to the Cargo Forecasts

- Overall regional forecast based on historical trends and economic forecasts
- Airport allocation based on existing structure of air cargo industry and potential changes



Air Cargo Forecasts

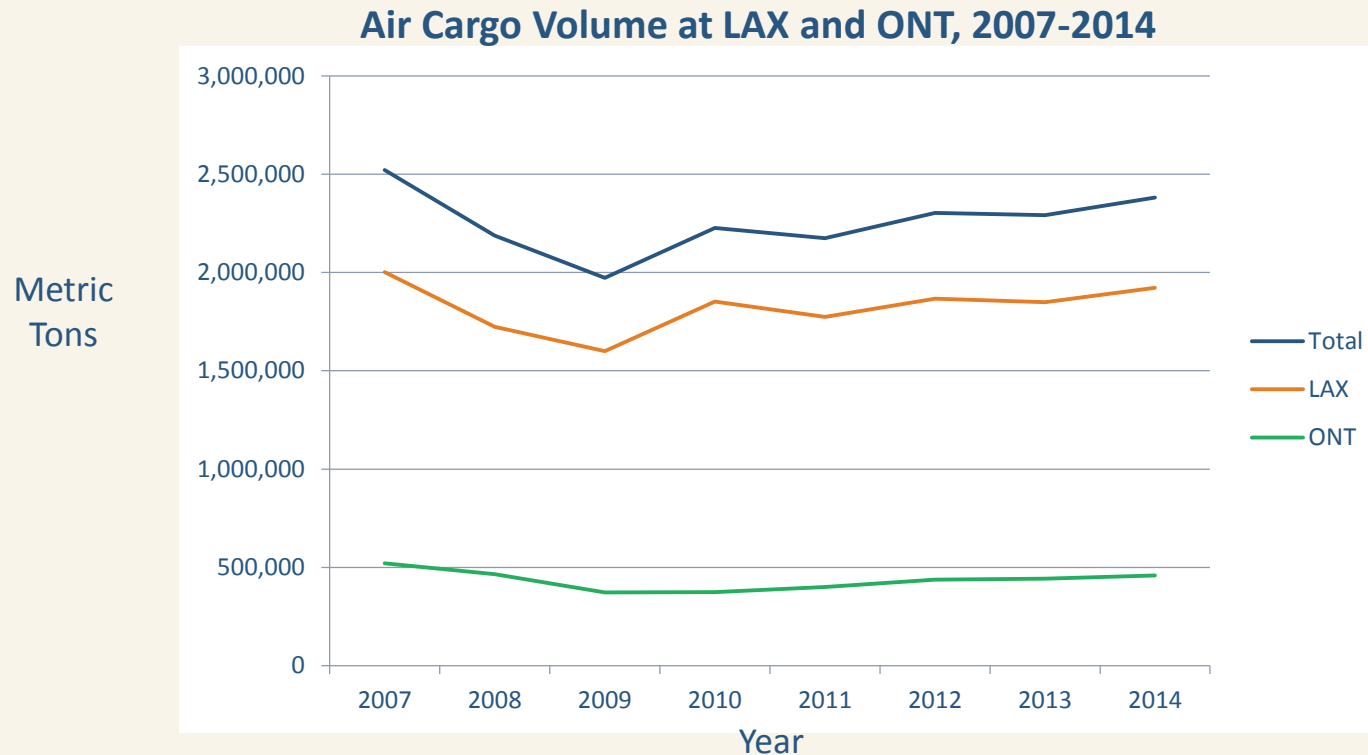
Current Air Cargo Volumes in the SCAG Region

- In 2014, SCAG region airports handled 2.4 million metric tons of air cargo
- LAX, ONT, BUR, SNA, and LGB combined handled 99.9% of total volume
 - LAX handled 77% of total volume
 - 34% belly cargo in passenger planes, 66% full freighter
 - ONT handled 19% of total volume
 - 1% belly cargo in passenger planes, 99% full freighter



Air Cargo Forecasts

Like passenger traffic, air cargo is very sensitive to the economy

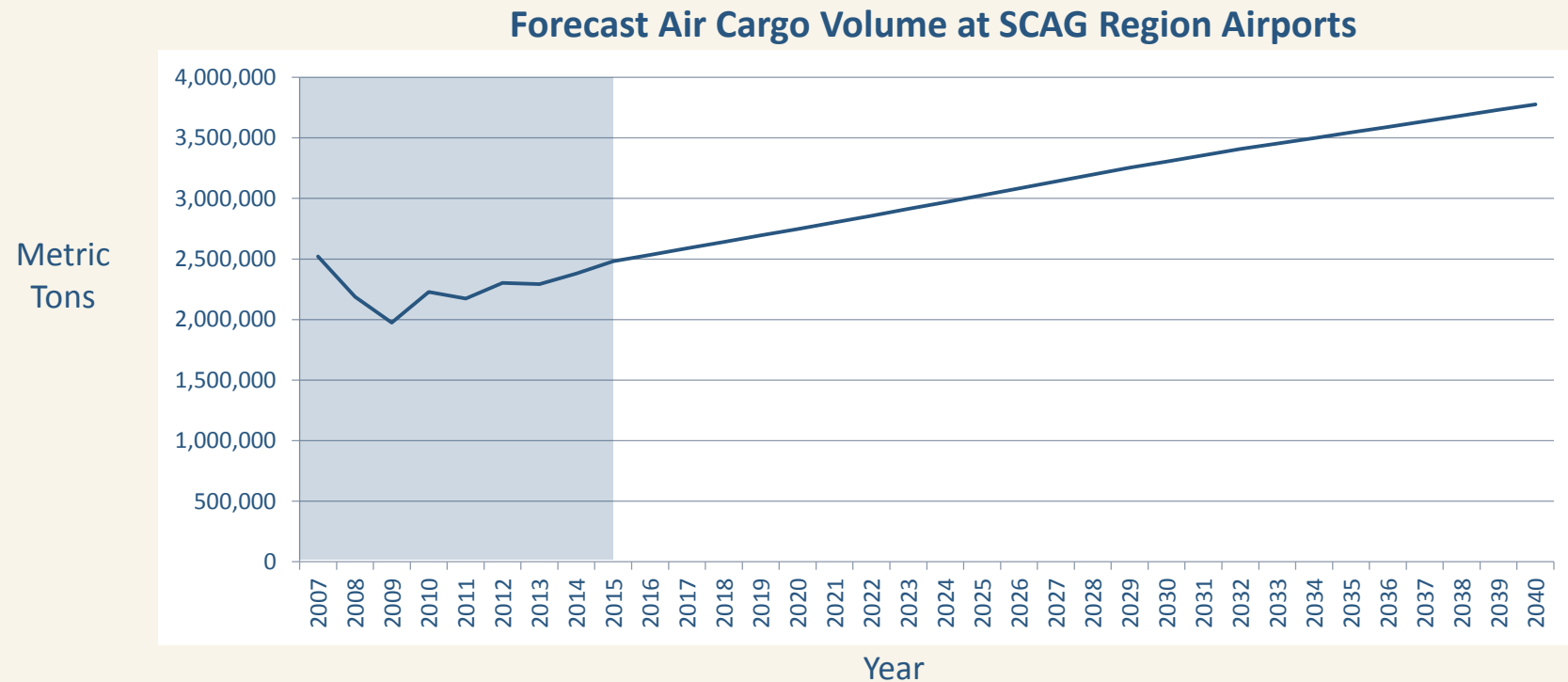


- Increase in two-day and same-day delivery (e.g., Amazon Prime) has resulted in development of huge distribution centers in markets across the country, not more air shipment

Air Cargo Forecasts

Like passenger traffic, air cargo is very sensitive to the economy

- Air cargo is forecast to increase from 2.40 million metric tons in 2014 to 3.78 million metric tons in 2040, an annual growth rate of 1.8%



- 2012 RTP/SCS forecast for 2035 was 5.08 million metric tons

Air Cargo Forecasts

Types of Air Cargo Carriers

- Passenger airlines
 - Belly cargo
 - Cargo divisions
- Charter airlines
- Integrated carriers (e.g., FedEx, UPS)
- All-cargo airlines

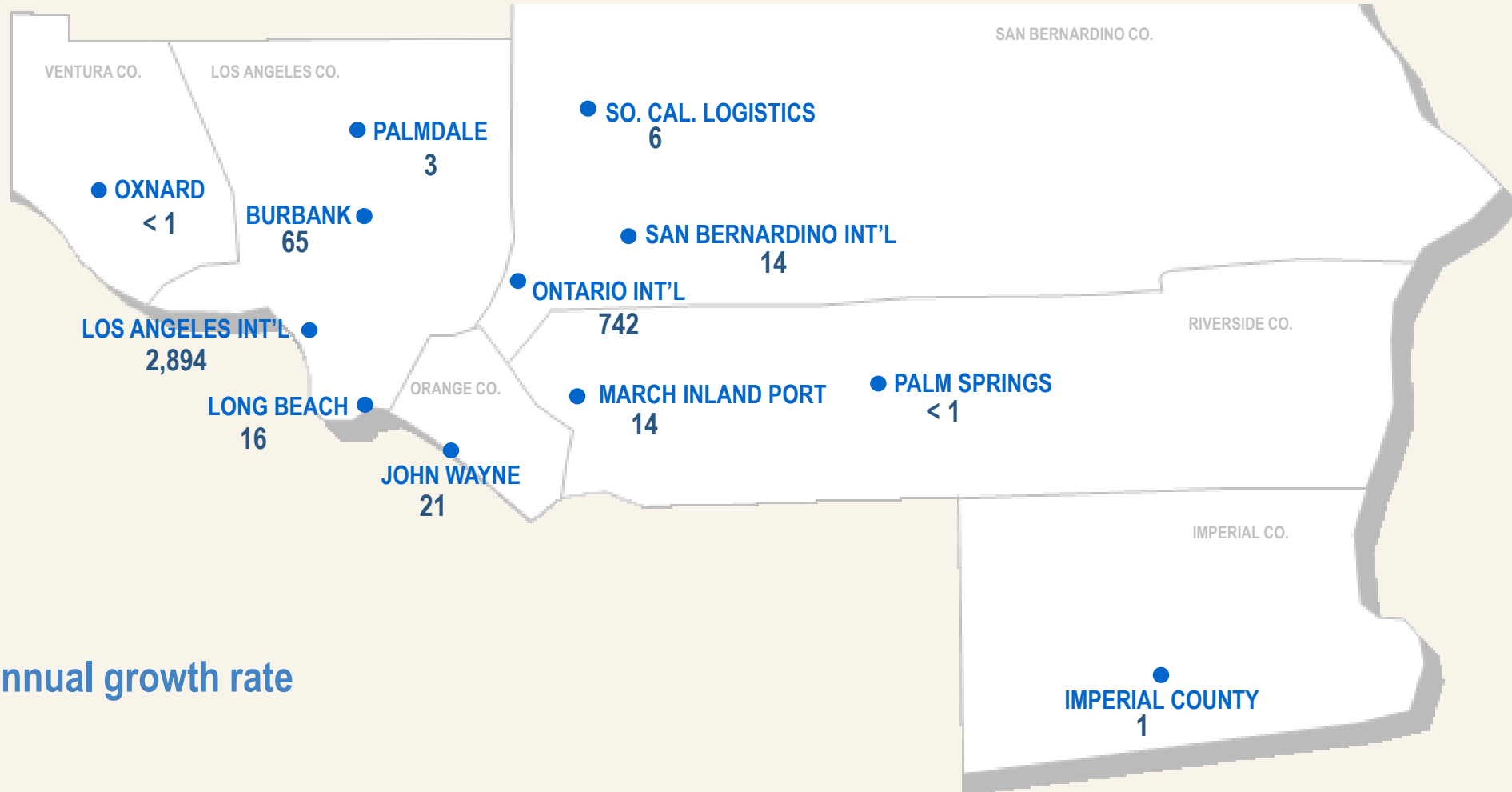


Air Cargo Forecasts

Airport Cargo Allocation Assumptions

- Air cargo on passenger airlines follows the major passenger flows
 - Belly cargo travels with passengers
 - Cargo divisions share facilities with passenger operations
- Major integrated carriers unlikely to relocate from existing facilities
- Only cargo on charter and all-cargo airlines (approximately 15% of total volume) is candidate for diversion to regional airports
 - Per 2012 RTP/SCS, assume 25-30% of cargo on charter and all-cargo airlines is potentially divertible, and that half of that actually diverts
 - $15\% \times 30\% \times 50\% \approx 2\%$

2040 Forecast Air Cargo Demand (Thousands of Metric Tons)



1.8% annual growth rate

Airport Ground Access

- Currently, more than 200,000 daily arriving/departing air passengers
 - 2040 forecast: 330,000 daily passengers
- Low ground access transit share:
 - LAX: 3%
 - BUR: 1%
 - Others: <1%
- Half of all airport trips are pick up/drop off
 - Each accounts for two ground trips each

Airport Ground Access – Analysis

Conversion of air passenger trips to vehicle trips

MODE OF ARRIVAL	1 DEPARTING AIR PASSENGER TRIP GENERATES ¹ :	
	TO AIRPORT	FROM AIRPORT
Drop-off	1 HOV ² trip	1 SOV ³ trip
Drive self	1 SOV trip ⁴	—
Rental car	1 SOV trip	—
Limousine	1 HOV trip	1 SOV trip
Taxi	1 HOV trip	—
On-call (Shuttle)	Fraction of HOV trip	—
Transit	1 person trip	—
FlyAway	1 person trip	—

¹Arriving air passenger trip generates the same number of trips, but “to airport” and “from airport” are reversed.

²High occupancy vehicle

³Single occupancy vehicle; some drop-off return trips could be HOV trips if more than one person drops off a passenger.

⁴Some “drive self” trips will be HOV trips if more than one passenger is traveling together.

Airport Ground Access – Regional Strategies

- Support the regionalization of air travel demand
- Continue to support regional and inter-regional projects that facilitate airport ground access (e.g., HST, High Desert Corridor)
- Support ongoing local planning efforts by airport operators, CTCs and local jurisdictions
- Encourage the development and use of transit access to the region's airports
- Encourage the use of modes with high average vehicle occupancy (AVO)
- Discourage the use of modes that require “deadhead” trips to/from airports
- The Project List Appendix has a complete listing of ground access improvements in the Region

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THANK YOU!

Learn more by visiting www.scagrtpscscs.net

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